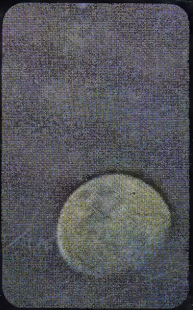
PEOPLE CALL IT HOME



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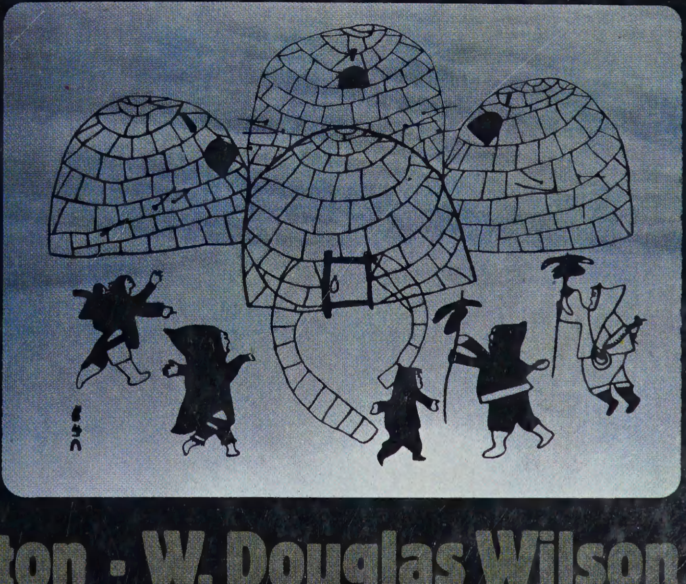

J. Bradley Cruxton · W. Douglas Wilson

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People Call It Home

PEOPLE CALL IT HOME

J. Bradley Cruxton

W. Douglas Wilson

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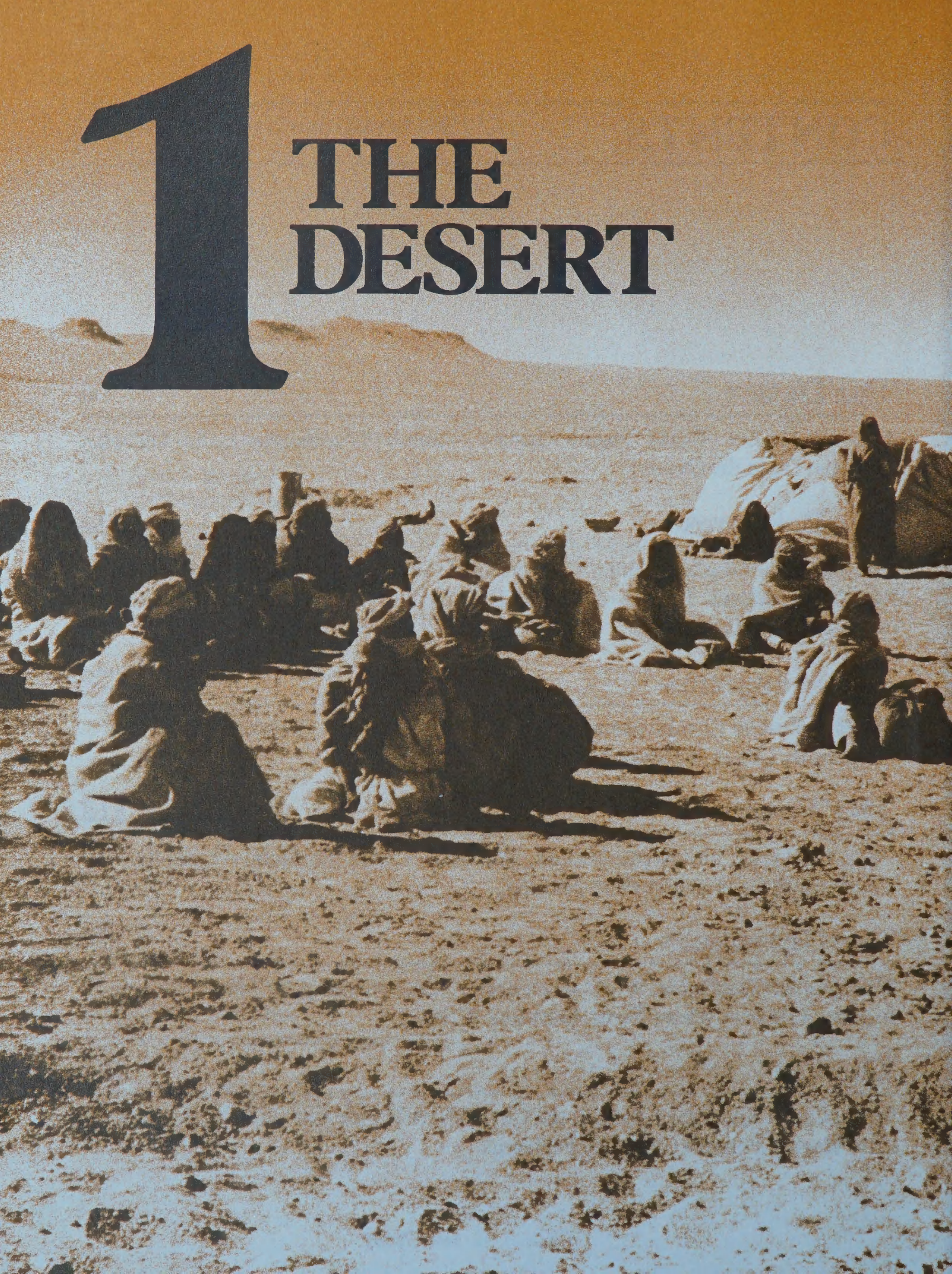
THE DESERT



A Trip to the Zoo

Charlie, the camel, stared at the class through the fence at the zoo. He wasn't sure that he wanted to be studied by Mrs. Lang's class. Besides, today he was feeling grumpy.

Anna, the zoo-keeper, had warned the class that camels can be mean and nasty. They groan and moan when they have work to do. When they get the chance, camels nip at their trainers. In the zoo, they have been known to spit at their visitors!

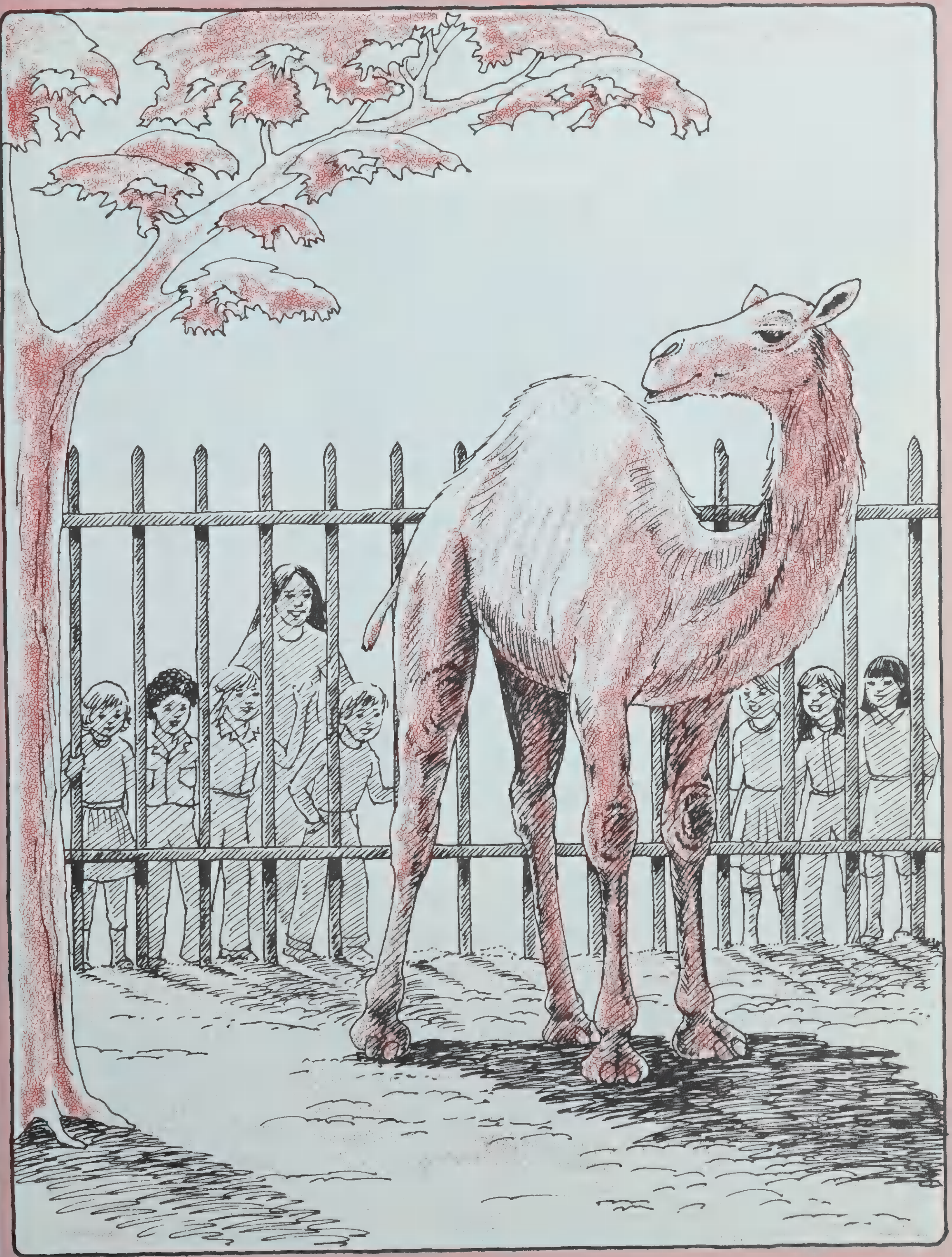
On Charlie's pen was a sign that looked like this:

CHARLIE

Family: *Camelus dromedarius*
Habitat: Sahara Desert

Anna explained that camels come in two styles. Some camels have one hump and some have two. The Latin words "*Camelus dromedarius*" mean that Charlie belongs to the one-hump family. The children already knew that "habitat" meant homeland.

"Let me tell you how Charlie came to our zoo," said Anna. "Camels live in hot, dry deserts. Two years ago I went to north Africa to buy camels. I bought Charlie and his mother from some people who live in the Sahara Desert. These people are called nomads. They travel in the desert, moving from place to place. They raise herds of camels, sheep, and goats. Sometimes nomads sell a few camels to zoos in other parts of the world."



Charlie's Desert Home

Anna showed Mrs. Lang's class some photographs of deserts.

Saudi Arabian Desert ▶
▼

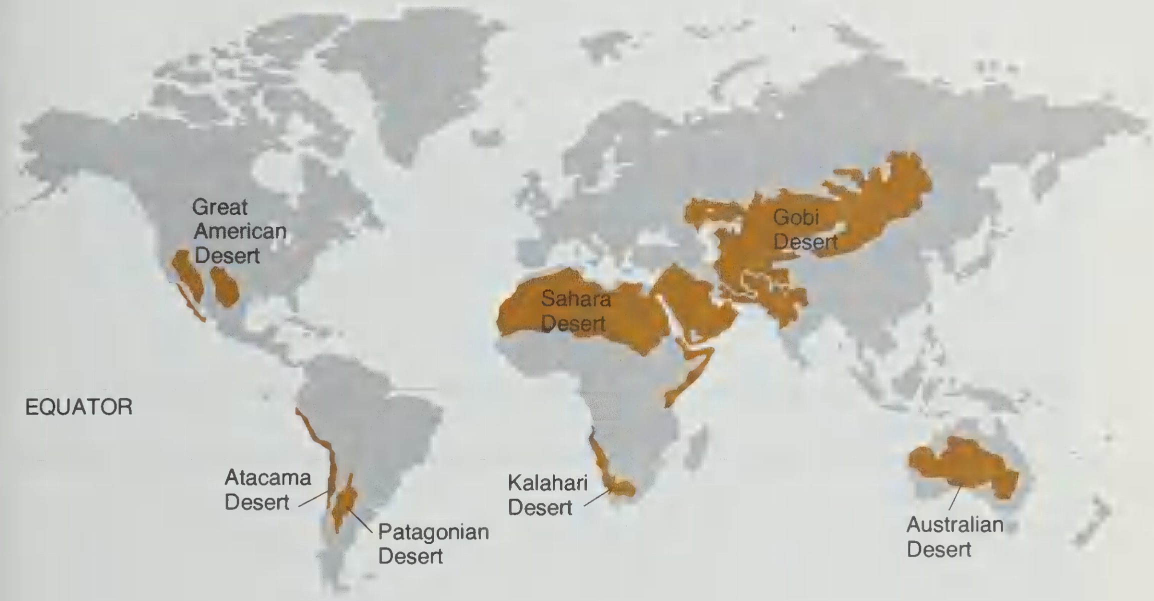
American Desert ▶

Questions:

1. **What do deserts look like?**
2. **Have you ever seen a desert? If you have, where was it located?**

"We loaded Charlie and his mother onto a jet," said Anna. "It was a long trip from the Sahara Desert to Canada. I was excited when all of us arrived home safely. Now Canadian children can enjoy seeing Charlie and his mother."

Locating World Deserts



1. On a world map mark on the names of the continents – Africa, Antarctica, Asia, Australia, Europe, North America, and South America. Mark on the map the names of the oceans – Atlantic, Pacific, Indian, Arctic and Antarctic.

   Here is a list of some of the important deserts of the world:

   1. Sahara Desert
   2. Great American Desert
   3. Atacama Desert
   4. Arabian Desert
   5. Kalahari Desert
   6. Australian Desert
   7. Gobi Desert
   8. Patagonian Desert

   Using an atlas or globe and the map in the text, locate these deserts. Put the name of the desert in its location on your world map.
   Lightly colour the deserts.

2. Name the important deserts by continent.
   Africa (2), Asia (2), Australia (1), North America (1), South America (2).

3. Is the Sahara Desert located north or south of the Equator in Africa?

How Much Rain Falls in the Sahara Desert?

Here are the monthly amounts of rainfall for a place in the Sahara Desert. The rainfall is measured in centimetres.

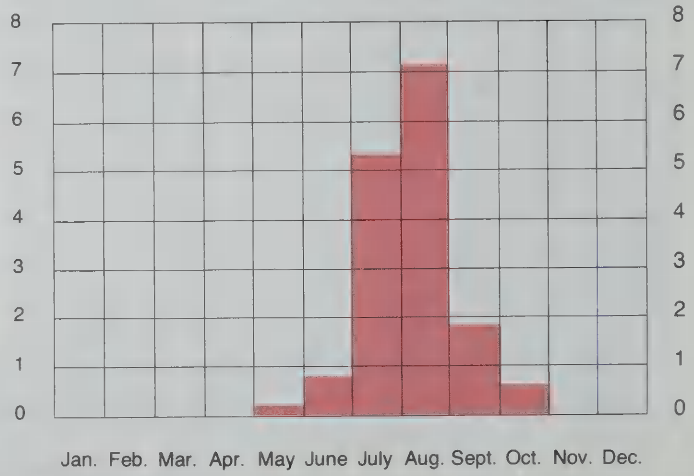
Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	0	0	.2	.8	5.3	7.1	1.8	.5	0	0

Making a Bar Graph

Follow these steps to make a bar graph.

1. Draw a bar graph like the one on the right. Mark the months along the bottom of the graph. Print Rainfall in Centimetres beside the scale at the side.
2. Using the scale at the side of the graph, mark the amount of rainfall for each month. Draw a line across each month.
3. When you have finished each month, colour from the bottom of the graph up to the lines you have drawn.

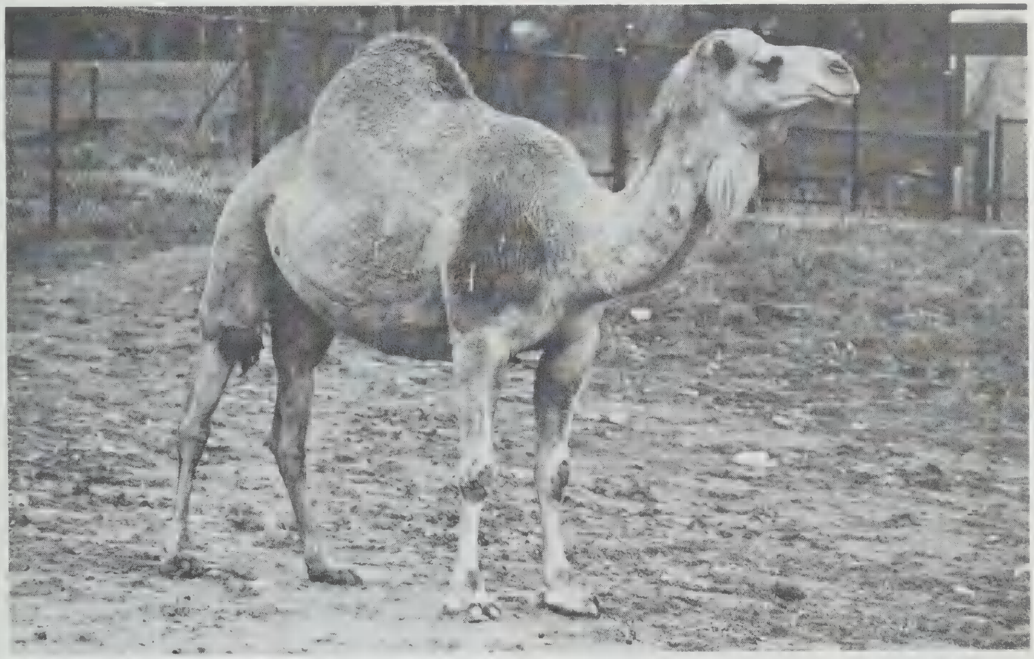
Here is what the same information looks like on a graph.



1. Name the months when there is no rain in the desert. How many are there?
2. What is the wettest month of the year?
3. What is the wettest season of the year?
4. Look back at the pictures of the desert. Why are so few trees and large plants growing there?
5. Compare the amount of rain this place gets with your area of Canada. Books in your school or library may help you. Now make a bar graph to show the amount of rain for each month where you live.

Picture Study: CAMELS

"The camel is well designed for its life in the hot, dry, sandy Sahara," said Anna. "Camels are the best animals for living and working in the desert. Take a close look at Charlie's legs and feet."



"Charlie looks like he is walking on stilts because his legs are so long and thin," joked Cindy.

"Stilts are a good way of describing Charlie's legs," answered Anna. "The hottest part of the desert is at ground level. Those long legs help the camel by lifting his body up and away from the scorching sands. Because the camel's legs are so strong, he can carry heavy loads for ten hours a day. A camel like Charlie can walk at a speed of about four kilometres an hour carrying a full load on its back."

"Why does Charlie have such big, wide feet?" questioned Pierre.

"A camel's feet are especially good for desert

walking. They spread out like leather cushions as the camel puts his foot down. They help him to walk on the surface of the sand without sinking in."

"Here is a picture of a sandstorm in the desert," said Anna. "Sometimes strong winds blow causing sandstorms. So much sand and dust blow around that it gets quite dark, even during the day. People and animals must find shelter from the choking wind."

"Wouldn't the sand blow into the camel's eyes and nose and really hurt him?" asked Jenny.

"No," answered Anna. "Each eye is protected by three lids. The inner lid is like a built-in windshield wiper. When the camel winks, the inner lid cleans specks of dust from his eye. Charlie's bushy eyebrows and long eyelashes act as sunglasses to shield his eyes from the bright desert sun. In his nose he has a little shut-off valve. When the desert wind blows and dust is flying, he just shuts his nostrils. During a sandstorm, a camel falls to his knees and closes his eyes and nose!"

"Anna, why do camels have humps?" asked George.

"People used to believe that the hump was a built-in water storage tank. The fact is, the camel's hump is filled with fat. The fat is extra fuel. It provides energy to keep the animal going when there is not enough food for it. The hump gets smaller as the fat is used up. A camel's owner can tell by the hump if the camel is in good condition for a long desert journey."

"What does Charlie eat?" Sal wanted to know.

"Well, here at the zoo," said Anna, "Charlie is fed grain and hay. Out on the desert, a camel will eat almost anything – thorn bushes, prickly cacti, wild desert plants, and leaves. A hungry camel has been known to eat bones, fish, and even his owner's tent!"

Just then Charlie decided to show off by lying down. He bent his front legs, kneeled, folded up his hind legs, and fell to the ground with a thud. The class laughed.

"It looks like Charlie just folded himself up," exclaimed Bruce.

"Those pads on his knees really help him when he kneels down," Anna pointed out. "They protect him from the burning sands of the desert. When he is in a kneeling position, a rider can mount him or load bags on his back."

A few minutes later Charlie stood up. He straightened his hind legs and jerked up his front legs. Then he turned away and strutted to the other side of his pen. The class noticed that when Charlie walked, he moved his two left feet forward at the same time. Then his two right feet moved forward to catch up. This made him seem to roll from side to side like a ship in the waves. No wonder some people call the camel the "ship of the desert".

The children knew that it is much hotter in the Sahara than on the hottest summer day in Canada. They were surprised to hear that a camel does not sweat much, even when it is very hot. The reason for this is that his body temperature goes up as the weather gets hotter. Even when he does sweat a bit, the moisture is held in the hair that covers his big, lumpy body.

"Does a camel ever get thirsty?" questioned Carlos.

"Oh yes!" replied Anna. "A camel must wait a very long time between drinks. He will break into a run when he comes close to a watering hole. Then he will drink without stopping for ten minutes. That's like you drinking 600 glasses of water without a break!"

Maria thanked Anna for talking to them about camels. Charlie was still at the other side of his pen pretending not to hear. But as soon as they started to walk away, Charlie turned to look at the children.

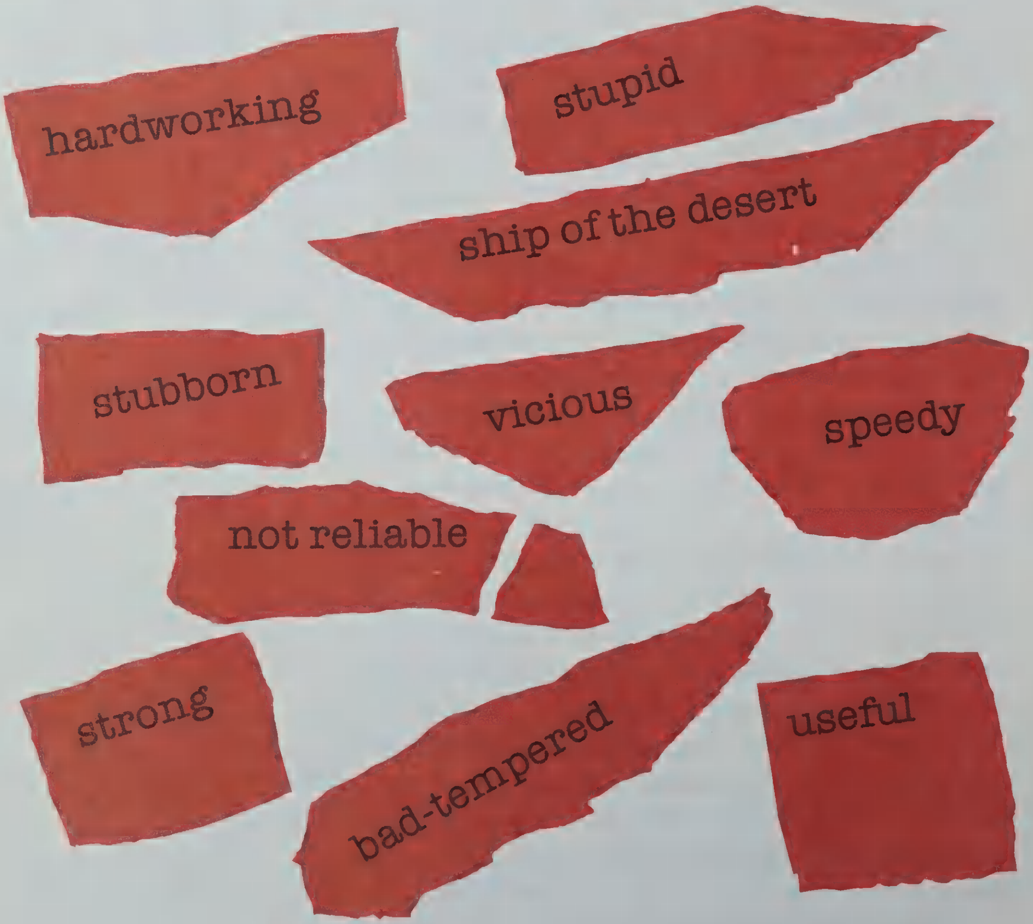
"I think Charlie liked the attention," said Tony.

Charlie did seem to have a grin on his face as Mrs. Lang's class said goodbye to him!

DICTIONARY FUN

The following words have been used to describe the camel. Use a dictionary to make sure you understand the meaning of all the words.

Make two lists. In one list place the words which are saying something nice about the camel. In the other, list those words which tell the faults of the camel.



Which words would you use to describe the camel? Can you think of other words to add to the list?

The Plaint of the Camel

Canary-birds feed on sugar and seed.
Parrots have crackers to crunch;
And, as for the poodles, they tell me the Noodles
Have chickens and cream for their lunch.
    But there's never a question
    About my digestion –
    Anything does for me!

Cats, you're aware, can repose in a chair,
Chickens can roost upon rails;
Puppies are able to sleep in a stable,
And oysters can slumber in pails.
    But no one supposes
    A poor camel dozes –
    Anyplace does for me!

Lambs are enclosed where it's never exposed,
Coops are constructed for hens;
Kittens are treated to houses well-heated,
And pigs are protected by pens.
    But a camel comes handy
    Wherever it's sandy –
    Anywhere does for me!

People would laugh if you rode a giraffe,
Or mounted the back of an ox;
It's nobody's habit to ride on a rabbit,
Or try to bestraddle a fox.
    But as for a camel, he's
    Ridden by families –
    Any load does for me!

A snake is as round as a hole in the ground,
And weasels are wavy and sleek;
And no alligator could ever be straighter
Than lizards that live in a creek.
    But a camel's all lumpy
    And bumpy and humpy –
    Any shape does for me!

C.E. Carryl

1. **What is the camel complaining about in each verse?**
2. **Tell why you agree or disagree with each of his complaints.**
3. **What would you tell the camel to cheer him up?**
4. **Try writing your own poem about a camel.**

Camels Forecast the Weather

For hundreds of years nomads have believed that camels can forecast the weather. When camels become restless and sniff the air, nomads believe a sandstorm is coming.

In the Oklahoma City Zoo there was a famous camel named India. Her trick was forecasting rain.

For several weeks there had been no rain in Oklahoma. Every day the people looked at the sky hoping to see rainclouds. But no rain fell.

One afternoon the zoo-keeper saw India walk up onto a little hill in her pen. She stood there straight and tall. She lifted her nose to the sky and sniffed the air. She did this several times. This could only mean one thing. The zoo-keeper hurried into the zoo office and announced happily, "There's going to be rain! India forecast it. She always smells rain."

The zoo called the weather office downtown. The weatherperson laughed and shook his head. "So the camel says there's going to be rain. Maybe the camel should be with the weatherperson." He studied his maps. He checked all his instruments. He looked at the sky. No question about it, the camel was wrong. The weather forecast for that day was "continuing hot and dry, no rain."

But a few hours later, India was splashing about happily in her pen. Everywhere in town people talked about the cloudburst that brought an end to the drought.

1. Imagine you are the weatherperson. The zoo-keeper has just phoned to tell you India's forecast. What would you think? Tell how you felt later when it started to rain.

2. How would you feel if you were the zoo-keeper? Why?

3. How do other animals forecast a change in weather or seasons?

4. Suggest some ways the people of Oklahoma City could thank India for her weather forecast.

CAMELS Believe it or not!

Nomad women used camel's milk as a face cream. They believed it kept the skin soft and beautiful.

Camel herders call their camels by singing a tune. The camels recognize the tune and come running when this tune is sung.

Camel fights are still popular entertainment in some places.

A camel chews its cud like a cow.

Camel milk can be made into an alcoholic drink called kummis.

A nickname for the camel is "Ata Allah" which means "gift of God."

A baby camel makes a "baa" sound like a baby lamb.

The desert police in the Sahara ride camels instead of cruisers.

The fat of a camel's hump can be melted and used like butter.

Visiting the library

Visit your school or community library to find out more about camels. Make a bulletin board display of your research. Call it "Believe It or Not." Ask the librarian to help you find material. Librarians are friendly people. When Mrs. Lang's class went to the library, the students' conversation with the librarian went like this:

Sal: Mrs. Lang sent us to find books about camels. Can you help us?

Mr. Reader: (librarian) In libraries, we have many small boxes with cards. On the cards, we have listed all the books in the library in alphabetical order. This is called a card catalogue. Look under the letter "C" for books about camels.

Jenny: Will those cards have all the books about camels under the letter "C"?

Mr. Reader: There are other cards you could look at, Jenny. Try "A" for African animals. You can also try "D" for desert animals.

Maria: How do the cards tell us where the books are?

Mr. Reader: The cards that you find will have numbers. Look for the shelf with the same number. You will probably find the books you want on the shelf with numbers in the 600s.

George: Can we find any pictures of camels?

Mr. Reader: The card catalogue will help you find those, too, George. They will tell you if there are photographs or drawings in the picture files. They will also tell you if we have any magazines or pamphlets about camels. Come and ask me if you need more help.

Sal: Thank you very much, Mr. Reader!

Have Some Fun With Proverbs

A proverb is a short, wise statement used for a long time by many people.

"The straw that broke the camel's back" is an example of a proverb. A greedy camel owner kept piling bags onto his camel's back. The camel managed to lift the heavy load. When the camel owner added a tiny bit of straw, it was too much. The camel collapsed. It was the straw that broke the camel's back.

Imagine that you have been driving your mother crazy all day. Something happens that makes her angry with you. She shouts at you. "That's the straw that broke the camel's back." What does she mean by using this proverb?

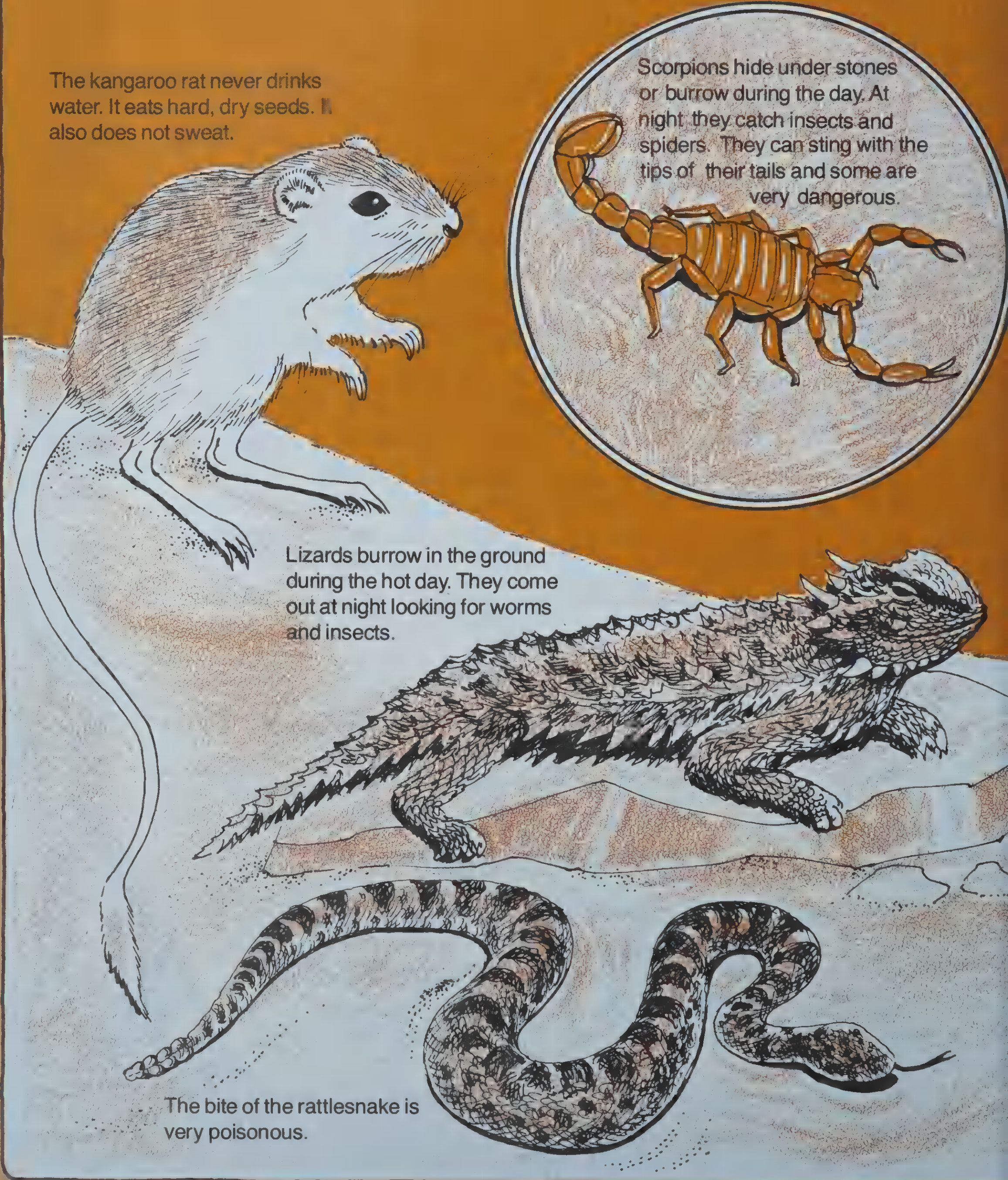
Here are some more proverbs about camels. Have some fun figuring out what they mean.

"If the camel gets his nose in the tent,
his body will soon follow."

"Making a fool understand is like
making a camel leap a ditch."

"Death is a black camel which kneels
at everyone's gate."

Plants and Animals of the Desert

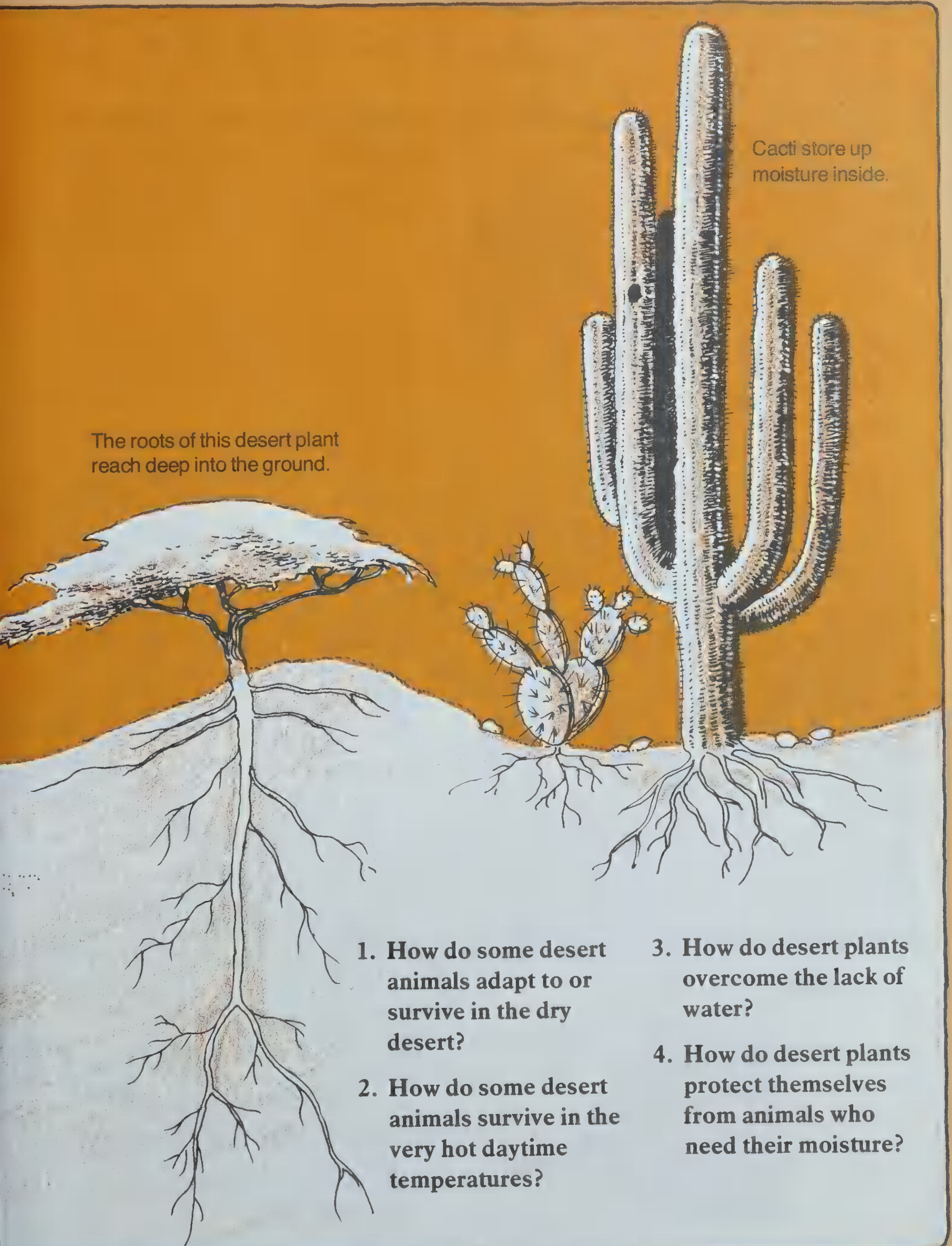


The kangaroo rat never drinks water. It eats hard, dry seeds. It also does not sweat.

Scorpions hide under stones or burrow during the day. At night they catch insects and spiders. They can sting with the tips of their tails and some are very dangerous.

Lizards burrow in the ground during the hot day. They come out at night looking for worms and insects.

The bite of the rattlesnake is very poisonous.



The roots of this desert plant reach deep into the ground.

Cacti store up moisture inside.

1. How do some desert animals adapt to or survive in the dry desert?
2. How do some desert animals survive in the very hot daytime temperatures?
3. How do desert plants overcome the lack of water?
4. How do desert plants protect themselves from animals who need their moisture?

Nomads of the Sahara

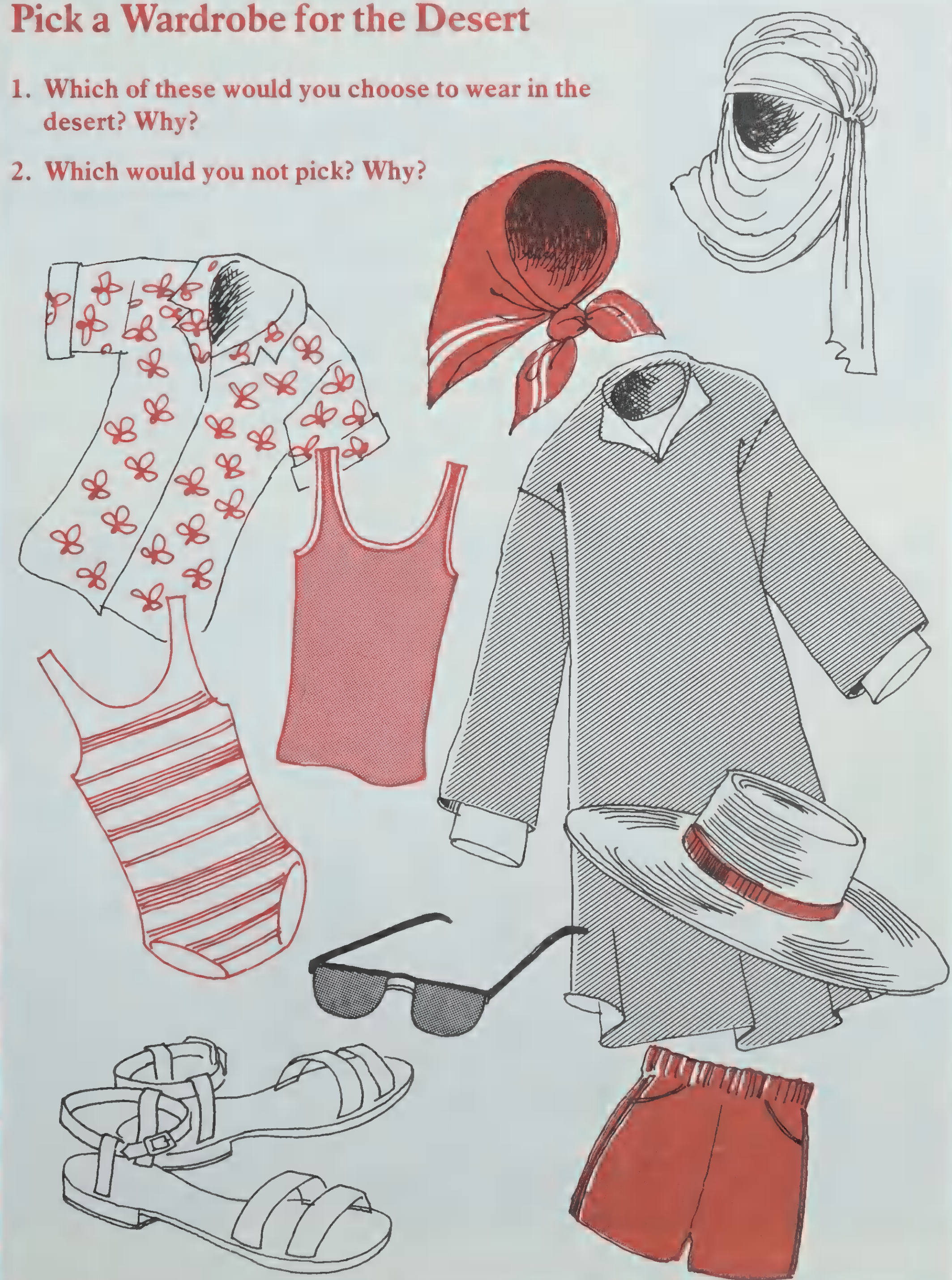
Mohammed belongs to a nomad family. Nomads always are moving from place to place. They live in tents in the desert. They travel with their herds of animals across the Sahara. They are looking for grass and plants for the animals to eat, and water for them to drink.

Questions:

1. **What is a nomad?**
2. **Why do nomads move from place to place in the desert?**

Pick a Wardrobe for the Desert

1. Which of these would you choose to wear in the desert? Why?
2. Which would you not pick? Why?



Desert Wear

Because of the heat of the desert, nomads wear long, loose-fitting robes that look like sheets. Men wear a headdress made of cotton, called a turban, to protect their necks and heads from the hot sun. There is also a piece of cloth which can be placed across the face as protection during a sandstorm.

Men and women wear sandals made of camel leather. Sandals are slipped off when the people enter the tents. They also remove their sandals when entering a mosque, which is a Moslem place of worship.

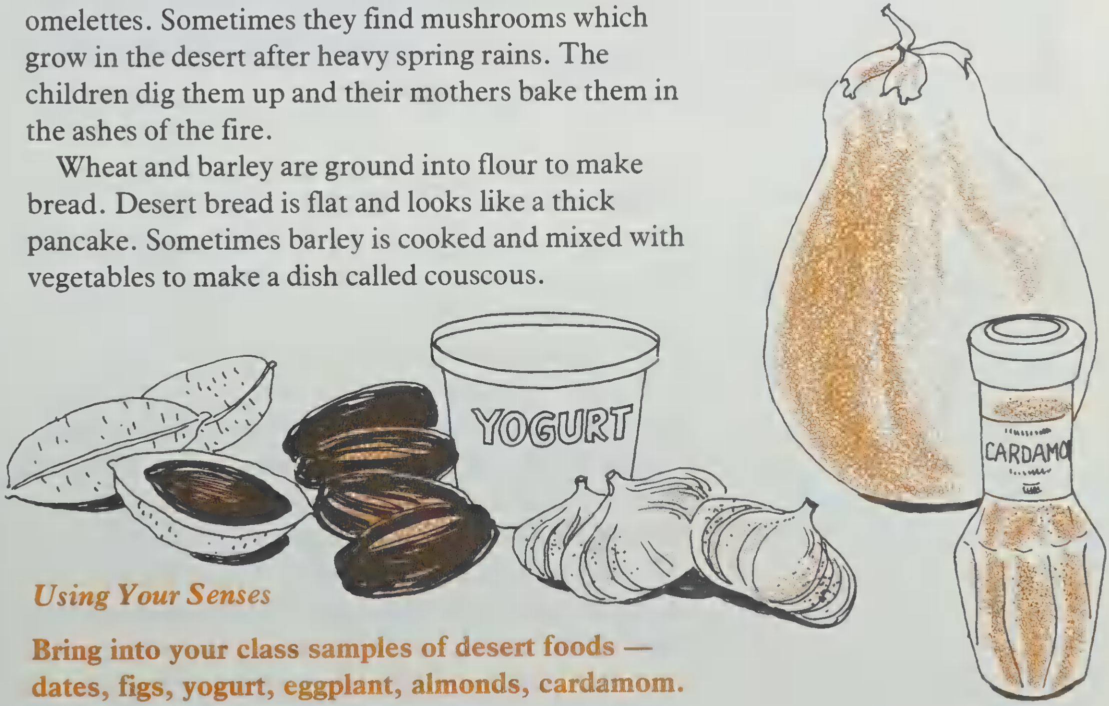
Food

Camel's milk is the main food of Mohammed's family. This milk contains a lot of Vitamin C. When the camels are milked in the morning, a little salt is added to stop the milk from turning sour.

Cheese and yogurt are also made from camel's milk. Sometimes yogurt is formed into balls and placed on the roof of the tent to dry out. After two weeks in the sun, the yogurt looks like a white stone. Children are often given a piece of dried yogurt as a treat. It can also be crushed, mixed with water, and cooked into a thick sauce. The sauce is poured over bread or rice. Though they raise animals, the nomads hardly ever eat meat.

In spring, Mohammed and his friends hunt for roots, bulbs, and birds' eggs. The roots and bulbs are eaten raw in salads. The eggs are boiled or made into omelettes. Sometimes they find mushrooms which grow in the desert after heavy spring rains. The children dig them up and their mothers bake them in the ashes of the fire.

Wheat and barley are ground into flour to make bread. Desert bread is flat and looks like a thick pancake. Sometimes barley is cooked and mixed with vegetables to make a dish called couscous.



Using Your Senses

Bring into your class samples of desert foods — dates, figs, yogurt, eggplant, almonds, cardamom. Smell and taste!

Shelter

The nomad tents are made of animal skins, or goat or camel hair woven into long strips. These strips are sewn together. A large piece is used for the roof, and is spread over tent poles. Its ends hang down to form two side walls for the tent. Other long strips are used for front and back walls. The tent is fastened down by ropes and pegs driven into the ground. Most tents are about 10 metres by 5 metres in size.

These tents work well in the changing climate of the desert. During the day the tents protect the nomads from the heat of the sun. Daytime temperatures in the desert soar very high. Most days are hotter than the hottest summer day in Canada. Not many trees grow

there to provide shade. The tent poles are raised high. Then the side walls are rolled up to allow a breeze to blow through.

At night the flaps of the tent can be closed to keep the tent warm. Temperatures at night drop very sharply. The desert sands cool quickly after the sun sets.

During a sandstorm the tent poles are lowered. This shelters the people inside from the raging wind and choking dust.

Mohammed's tent is divided into the men's side and the women's side. The fire, the saddles, and the guns and ammunition are found on the men's side. Rugs, woollen blankets, clothes, and food are piled on the women's side. Mohammed's baby brother swings in a hammock near his mother and sisters.

Nomad Family Life

Mohammed helps his father and brothers take care of the herds of camels, sheep, and goats. The animals must be guarded. Grass and plants must be found for the animals to eat. The nomads must also find water for the herds to drink.

Mohammed goes with the herds away from camp in the mornings. In the busy life of the young herder, there is little time for school. Mohammed's older brother teaches him to write a little Arabic. Arabic is his language. He also learns to read some passages from the Koran. The Koran is the holy book of the Moslem religion. Mohammed also learns much about herding and the life of the desert just by listening to the adults as they talk together.

While Mohammed is away with the herds, his sister stays with her mother in camp. Her mother teaches her to gather fuel and cook meals. The women and girls take the woolly hair of the camels and goats and weave it into cloth. The wool can be dyed many colours and woven into colourful rugs. From the hides of the animals, they make sandals and saddle bags.

The women and girls have another big job to do. When it is time for the nomads to move on, the women and girls take down the tents. When a new spot is found, they set up the tents again.

◂ These nomad women are drawing water that is stored in an oil drum.

Nomad families have herds of sheep and goats. Why do you think they raise these animals?

Something to Talk About

Even though nomad children don't go to school, what important things do they learn?

On the Move

Nomads are always on the move. That is why Mohammed and his family have few possessions. The cooking pots, baskets, clothes, and tents are all they have to carry with them. These are folded up quickly and loaded onto the camels. Mohammed's family owns fifteen camels. They are the family's most prized possessions.

Around the tent of Mohammed's family are the tents of his relatives. His grandparents, aunts, uncles, and cousins live close by. Mohammed likes living in this big, extended family.

All the families together are a tribe. Mohammed's uncle is the sheik of the tribe. That means he is the leader. Everyone comes to him with their problems. He tries to settle any quarrels. The sheik also decides when the tribe should break camp and search for a new place in the desert where the animals can eat.

Mohammed likes to live with so many people. He especially likes the evenings when everyone gathers together before the fire. This is the time when there are songs, stories, riddles, and games.

Play a Game

Finjan is one popular game played by nomads of the desert. There are two teams. Twelve coffee cups and a ring or stone are used. One team hides the ring under a cup and the other team has to guess where it is. When

the team guesses right, it scores twelve points. It now wins a turn at hiding the ring. The guessing team is helped by watching the faces of the other team.

Desert Customs

If we visited Mohammed's family, we would be welcomed warmly. Tea or coffee are always served as a sign of welcome and friendliness. Water, food, and shelter are freely shared, even with strangers.

Before eating, the guests are brought a basin of water. They wash the right hand, for nomads eat with that hand only. It is bad manners to eat with the left hand. The Koran says, "Blessed is the food eaten with the hand." So there are no knives and forks. Food is scooped up with the fingers, rolled into a small ball, and popped into the mouth. At the end of the meal the right hand is washed again. Then the guests drink cups of hot, sweet mint tea or coffee flavoured with a spice called cardamom. Thirst is the greatest danger of desert travel. Therefore, nomad custom says that guests must be given all the tea or coffee they wish.

Something to Think About

Why do you think friendliness and hospitality are so important to the nomads of the Sahara? Is friendliness and hospitality important to your family? How does your family show friendliness and hospitality to visitors?

Oasis Living

Not all the people living in the Sahara are nomads. Samia and her family are farmers who live on an oasis in the desert. An oasis is a place where there is water. Oases may be hundreds of kilometres apart on the Sahara. Date palm trees grow there because their roots can reach down to underground water. Wells can be dug and villages built.

Samia and her family do not move from place to place like the nomads. They live in a small house of sun-dried bricks. The roof is made of palm tree logs. Samia's mother weaves palm leaves into mats, curtains, and rugs for the floor of the house.

Samia's father grows wheat and barley. An oasis is the only place in the desert where there is enough water to grow crops. He also raises vegetables, such as peas, broad beans, melons, tomatoes, eggplant, onions, carrots and turnips. Figs, peaches, apricots, oranges, almonds, and pomegranates are also grown in desert oases.

The most important crop of the oasis is the date palm. Dates are very good to eat. Samia's father sells dates to buy the things he cannot grow for himself.

The Oasis Market

In the oasis where Samia lives there is a marketplace. Mohammed's tribe brings its goods here to trade. The tribe travels to the oasis with a long line of camels. You may have seen pictures of these desert caravans.

In the marketplace Mohammed's father may sell a young camel. This is how Anna, the zoo-keeper, bought Charlie and his mother. Often Mohammed's father trades his animals, wool, or hides for something he needs.

The trading of goods is called bartering. Bartering can take a long time. Mohammed's father needs some tea, coffee, and flour. He finds a merchant who is selling them. First, the merchant asks for a higher price. Mohammed's father offers a low price. Mohammed's father and the merchant shout back and forth. A price in between is finally agreed upon. Both Mohammed's father and the merchant go away happy.

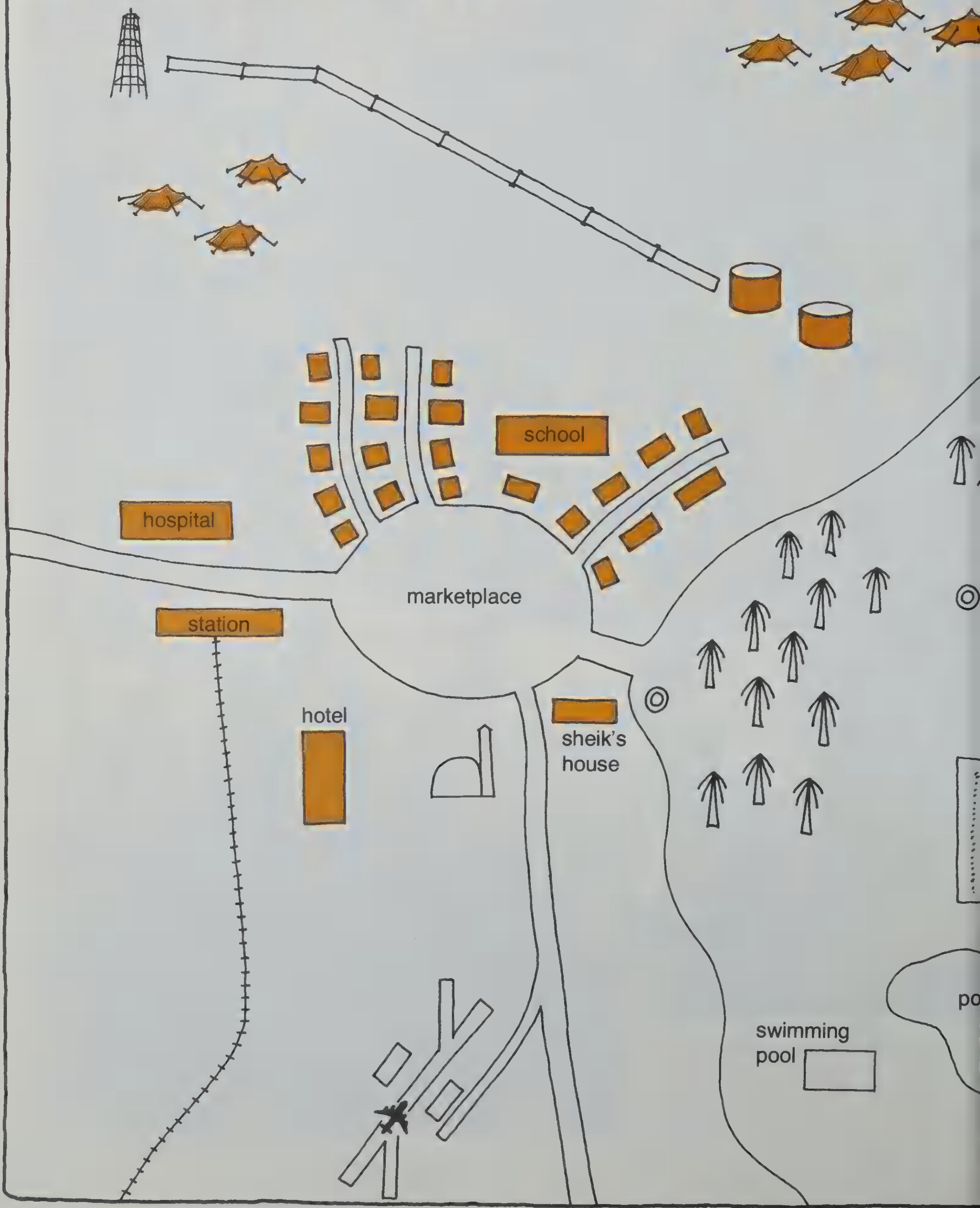
Bartering

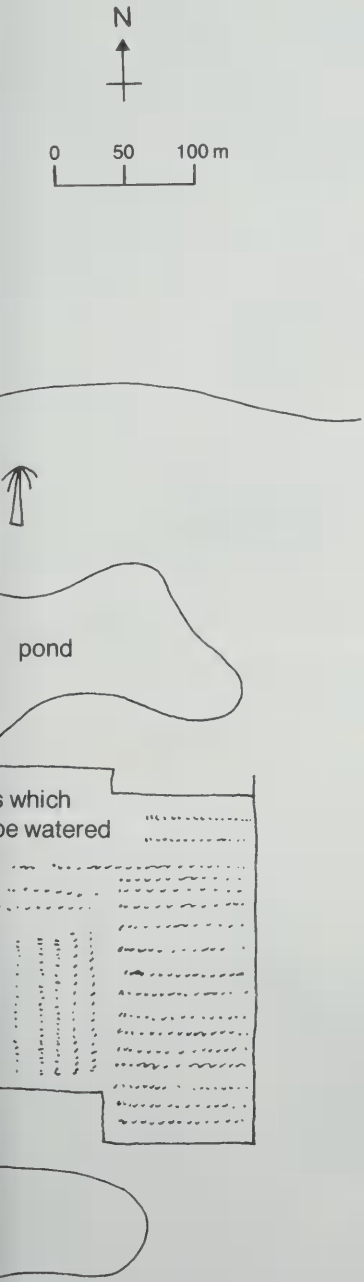
Bring in one possession you are willing to sell. Set up an oasis marketplace. Trade your goods by bartering.

◀ This marketplace is in a large oasis town. Notice that the goods are sold in stores in this market.

In the marketplace of a small oasis, the merchants spread their goods out on the ground.

A Desert Oasis in the Sahara



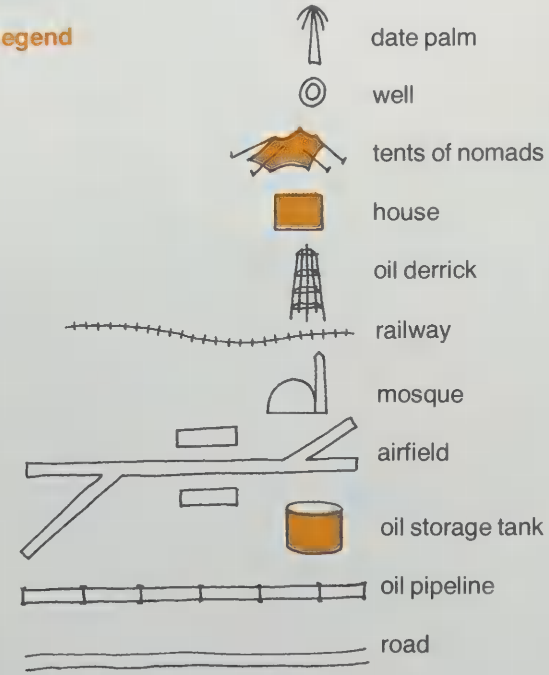


Reading a Map

Read the map of a desert oasis to tell whether these statements are true or false. Give reasons for your answers.

1. Most people on the oasis live in tents.
2. Few visitors come to an oasis.
3. The marketplace is an important part of an oasis.
4. Dates are an important crop of an oasis.
5. During their journeys, nomads may stop at an oasis.
6. Many oasis people are farmers.
7. Some oasis people work in the oil business.
8. Oil is an important product of the Sahara.
9. There is no modern communication with the outside world.
10. Life in the desert is gradually changing.
11. Most oasis dwellers are Moslems.

Legend



Oil in the Desert

An oasis is a busy place. Some families look after their farms or work in the date palm groves. Other families own shops or market stalls. They make and sell pottery, leather goods, and cloth. A few people work in the small oasis hospital or drive a bus. Nowadays, many oasis dwellers are trained as oil workers. They go out from the oasis to work in nearby oil fields.

Many of the world's largest oil fields are found under deserts. Deep holes are drilled into the ground to reach the oil. The drills are held in place by huge steel towers called derricks. The oil is pumped out of the ground. Then it flows along pipelines across the desert to cities on the coast. It is pumped onto ships and sold to countries around the world for fuel for cars and factories.

Oil is changing the lives of the people of the desert. It provides well-paying jobs for those who live in oasis towns. Some nomads have left their desert tents to settle down on the oases and work for the oil companies. Oil companies have built houses, schools, hospitals, and swimming pools in the oases for their workers. Roads and railroads have been built across the desert to the oil wells. Cars, oil tanker-trucks, and dune buggies are seen now as often as the camel.

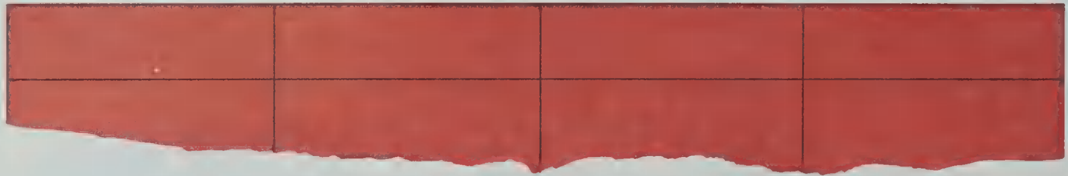
Something to Think About.

Make a list of the ways that oil is changing the lives of the people of the Sahara.

Make a Chart

Compare nomadic life on the desert with life of an oasis dweller under the headings:

- shelter
- how people earn a living
- diet
- crops grown



What Would You Do?

Suppose your car got stuck in the sand of the Sahara. You are stranded in the desert. It will take you twenty-four hours to walk to the nearest oasis. Choose three items you would like to have to help you survive. Tell why you chose each item. You must carry the three things with you.

one litre of water
knife
shovel
some dates
gun and ammunition
sleeping bag
tent
a sheet of plastic
rope
coat
a package of biscuits
six chocolate bars
hat
sunglasses
matches

Make a 3-D Model or a Diorama

Make a 3-D model or a diorama of the desert. A small box would be ideal. Show what a scene on a desert would look like. Fill in all of the inside of your box. Include in your model examples of:

- the desert surface
- desert conditions
- plants
- animals
- how people live
- how people move about

crayons

poster paints

cardboard box

sand

plasticine

scissors

glue

paper

paint brush

2

THE RAINFOREST

Small but Deadly

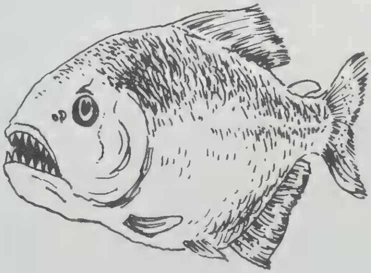
Maria is an Indian girl. She lives with her family deep in the rainforest along the Amazon River. Three times each day she carries the family water pail down to the Amazon. She takes a few steps into the river to fill the empty pail. Then she places the pail on her head and walks back to the hut. Maria does all of this without spilling a drop!

One day Maria went down to the Amazon to fill her pail as she had done hundreds of times before. She took a few steps into the water. Suddenly she screamed and dropped her pail. Something had bitten her foot.

Maria's mother heard her screams, ran, and grabbed her. She carried Maria out of the water and onto the shore. Maria was crying and her foot was bleeding badly.

What happened was no mystery to Maria's mother. She knew at once Maria had been bitten by a piranha, one of the most dangerous fish in the world. Thousands of deadly piranhas live in the Amazon river.

Piranha fish are small, but more dangerous than sharks. Most piranhas are less than 30 cm long, but they have razor-sharp teeth and very strong jaws. A piranha can take a nasty bite, but one piranha's bite will not kill a person. The real danger of piranhas is that hundreds of them swim together in groups. When a person or an animal wanders into the water, one piranha may take a bite. The bleeding caused by the bite excites the other piranhas. In a few minutes there may be nothing left but a skeleton.



Piranhas can tear fish, animals, and birds apart in no time at all! They can eat a whole cow in only five minutes.

When the Indians fish with nets along the river, they must be careful. If a piranha is caught in the net, it can bite off a person's finger as clean as if it had been cut off with a knife.

Maria's mother knew that she must get Maria out of the water quickly. This is why Maria's mother ran as fast as she could when she heard Maria's screams. Maria knew that this time she was lucky. In the rivers of the rainforest people must always be on the lookout for the dangers around.

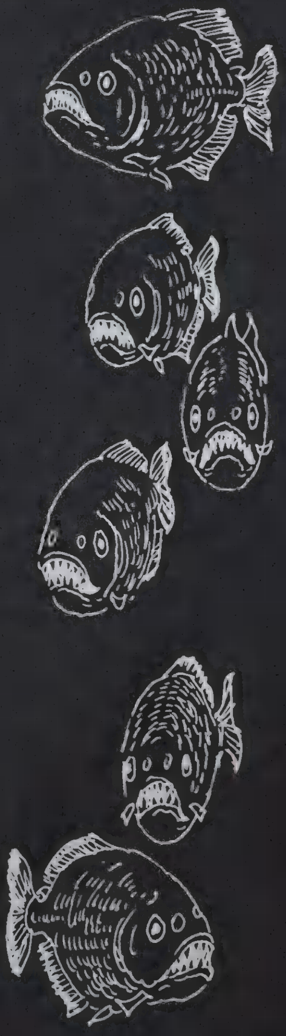
Draw a picture of the story of Maria. Title your picture "Maria's Lucky Escape."

QUIZ · QUIZ · QUIZ

Quiz yourself on piranhas.

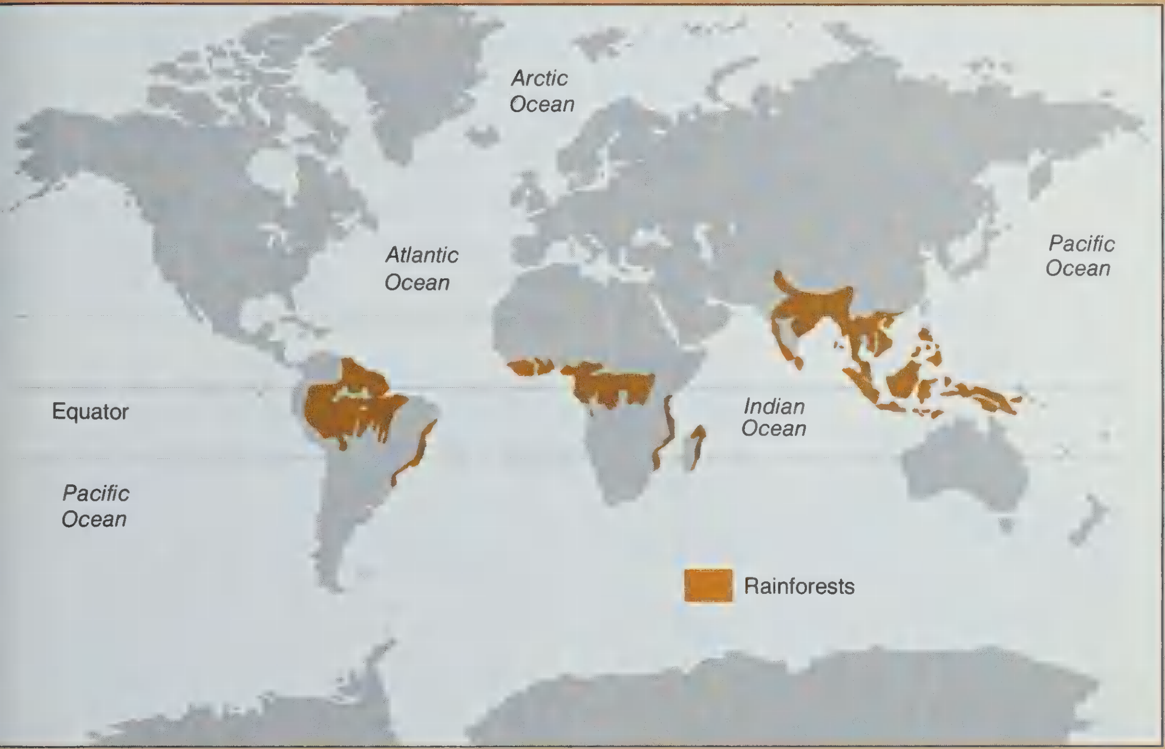
Do you agree or disagree with these statements about piranhas?

1. Piranhas are large fish.
2. Piranhas have razor-sharp teeth.
3. Piranhas mostly swim alone.
4. Piranhas seldom attack people or large animals.
5. Piranhas are excited by blood in the water.
6. Piranhas can be as deadly as sharks.
7. Piranhas can tear their victim apart in a few minutes.
8. People fishing must be careful if they catch a piranha in their nets.



Rainforests of the World

Look at the map of the world below. The rainforests are marked on this map in colour.

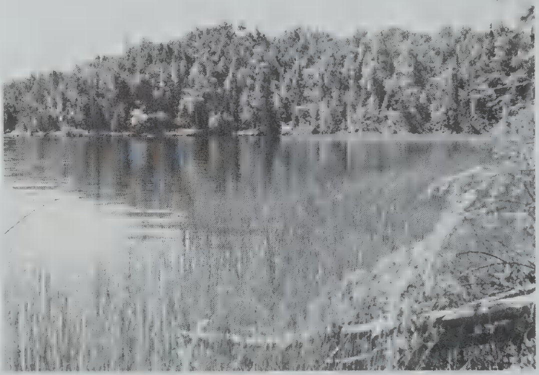


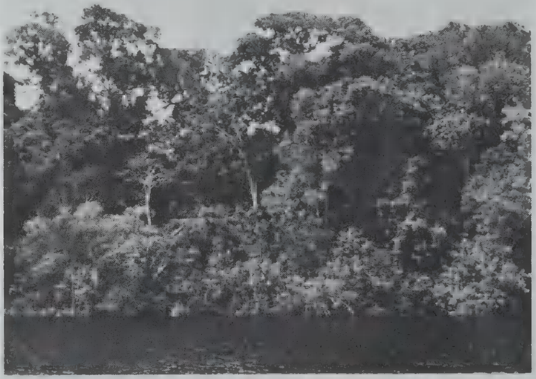
1. What continents have rainforests?
2. What continents do not have rainforests?
3. What continents have both rainforests and deserts?
4. Through which continents does the Equator run?
5. Are the rainforests near the Equator or far away from it?
6. Locate the Tropic of Cancer and the Tropic of Capricorn. Why do you think the rainforests might be called tropical rainforests?
7. Is the rainforest in Africa north or south of the Sahara Desert?
8. Is the rainforest in South America north or south of the Patagonian Desert?

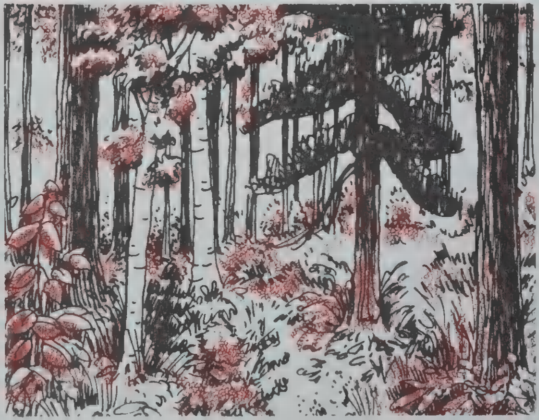
The Amazon Rainforest

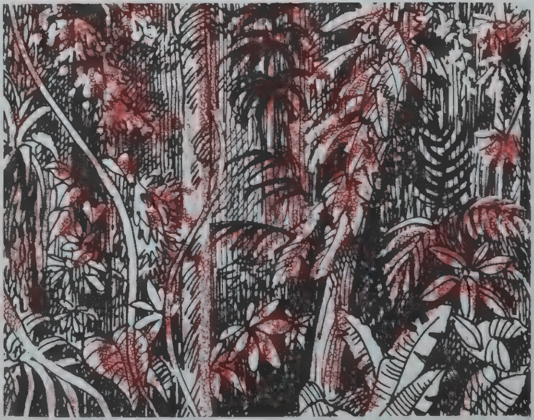
The largest tropical rainforest in the world is in South America. The Amazon River runs right through it. More than 1100 smaller rivers and streams flow into the Amazon. These smaller rivers are called tributaries. The land through which the Amazon and its tributaries flow is called the Amazon River Basin.

Look closely at the pictures and sketches below. On the left are pictures of a forest in southern Canada. On the right are pictures of a rainforest from Maria's world. What differences do you notice between the two forests?







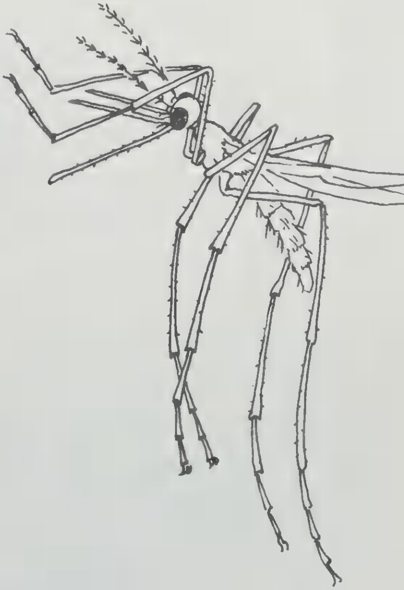


Walking in Maria's World

If you walked with Maria in the rainforest, you would find it dark even in the daytime. Very little sunlight shines through the thick leaves high above your head.

Huge trunks of trees stretch up straight and tall. Vines climb from the branches and trunks of the trees. Some are as thin as string. Others are as thick as your arm. They all climb up towards the sun.

The air is hot and steamy. Here it rains almost every day. You can smell the perfume from the flowers. The ground you are walking on feels soft and spongy.



Public Enemy Number One

Mosquitoes are everywhere in the dark, damp rainforest. Mosquitoes carry two deadly diseases. These are malaria and yellow fever.

Do some research to find out about malaria and yellow fever. What are the signs of these diseases? What drugs are used for their cures? Why don't we have these diseases in Canada very often? Why would scientists in the rainforest call the mosquito "Public Enemy Number One"?

Layers of the Rainforest

The Emergent Layer

- a few giant trees break through the roof of the rainforest
- some tower 50 metres above the jungle floor which makes them top-heavy
- the tallest trees develop buttress roots above the ground to prop them up

The Canopy

- thick green roof of leaves and branches
- so thick that little sunlight shines through it to the layers below
- vines climb and twist their way among the trees toward the sunlight
- orchids and other beautiful flowers cling to the branches of the tall trees

The Understory and Rainforest Floor

- half-grown trees of the understory struggle up to the sunlight
- the jungle floor is a carpet of dead leaves, ferns, mosses, and mushrooms

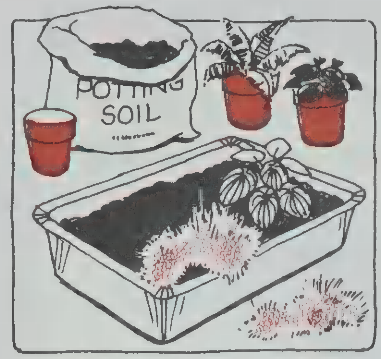
Make a Jungle in Your Classroom

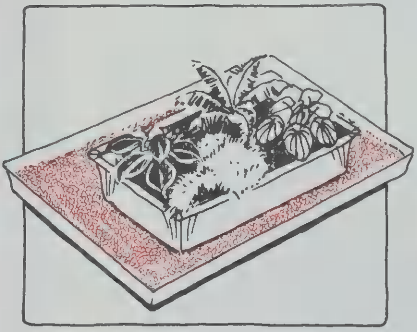
This is what you will need:

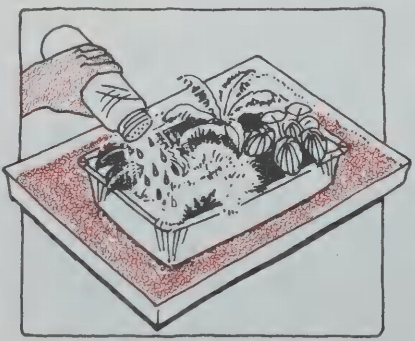
- large glass aquarium
- large tray (larger than the top of the aquarium)
- smaller tray or shallow dish with drainage holes
- potting soil
- sand
- an assortment of plants (African violets, periwinkles, ferns, peperomia, moss)

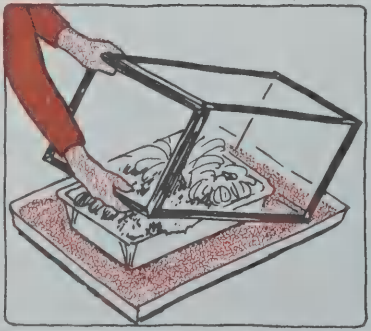
Steps for you to follow:

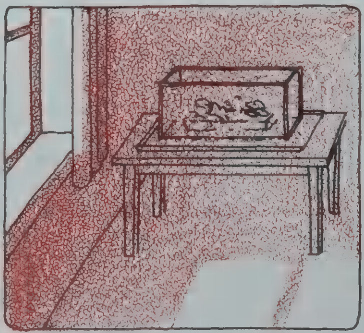
1. Put some potting soil in the planting tray. Place your plants in the soil close together.
2. Fill the large tray with damp sand. Place the tray filled with the plants on the damp sand.
3. Water the plants gently.
4. Place the aquarium upside down over the tray of plants.
5. Put the whole jungle in a bright place, but not in direct sunlight.
6. Do not water the plants, but make sure the sand is kept damp all the time.
7. Observe what happens in your jungle.

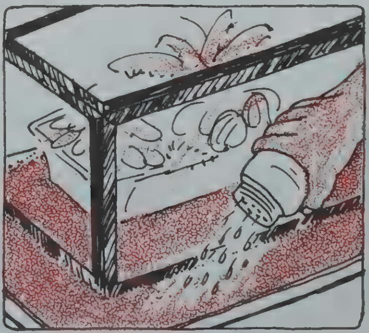






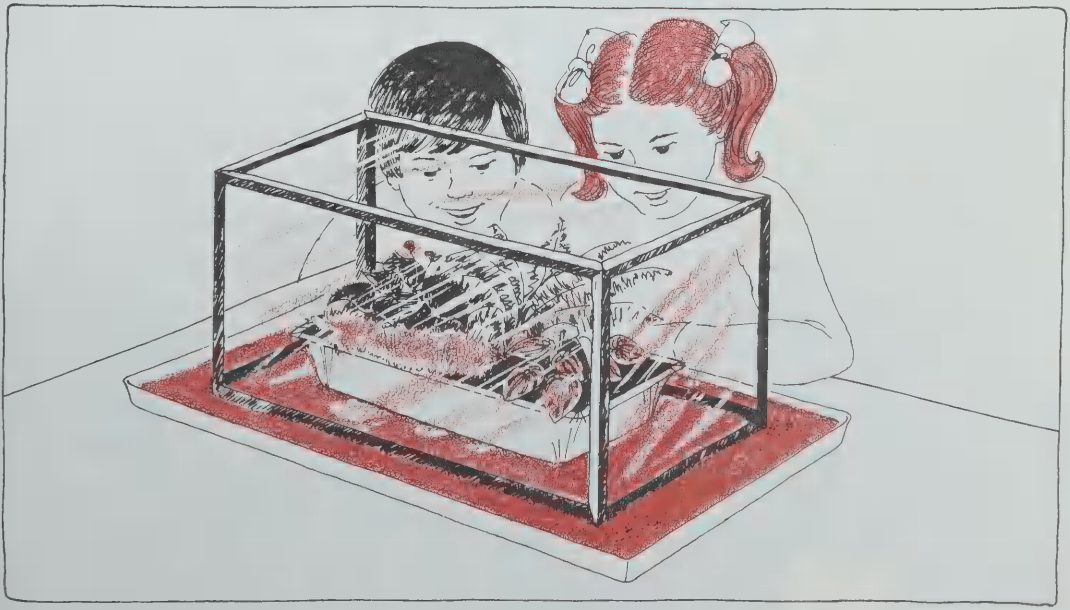


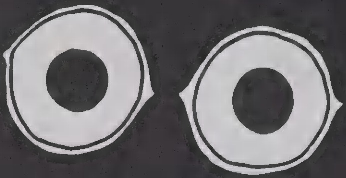


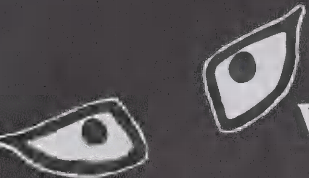


Observe and Consider

1. How fast did your plants grow? You may want to compare the same kinds of plants growing in a similar area outside the aquarium.
2. What happens to the inside of the glass container? Try to borrow a hygrometer that measures the amount of moisture in the air. Compare the amount of moisture in the air of your classroom to the amount of moisture in the air inside your jungle. You can also compare the temperature of the air inside and outside your jungle using a thermometer. What have you learned about the temperature and humidity (moisture in the air) of a jungle?
3. The glass walls of the aquarium prevent the moisture from escaping. To which layer of the jungle can this be compared?
4. Move your jungle into direct sunlight for a few days. Observe what happens.







WAKE UP, IT'S NIGHT!

With evening, many of the animals in the rainforest wake up. These animals are nocturnal. This means they sleep during the day. They come out of caves and other daytime hiding places and roam and feed at night.

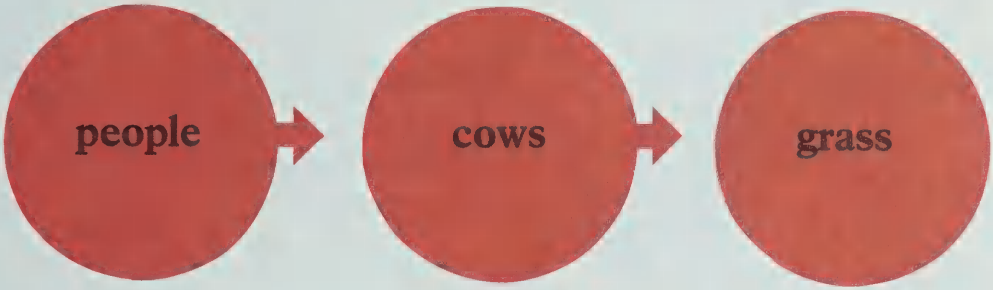
Bats swoop through the dim light. Bats do not see well, but make high-pitched chirps. The echoes from these chirps help bats to know when they are close to objects and insects. Bats can catch an insect as often as every eight seconds.

When night falls and the jungle is black, the animals become silent once more. This is the time for hunting. Suddenly the roar of a jaguar shatters the still air. The mighty hunter has caught its food for the night.

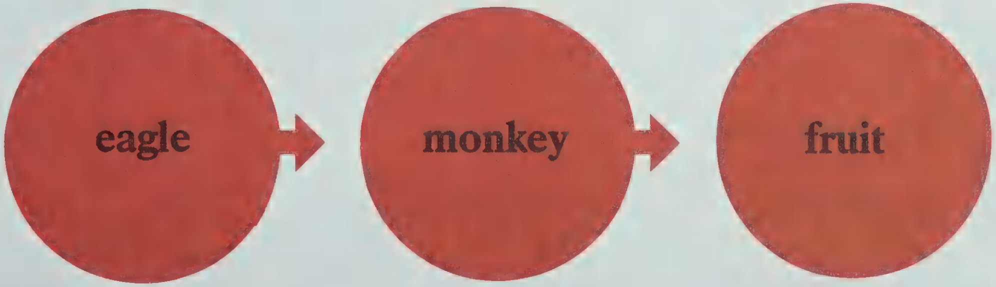
When daylight breaks the nocturnal animals return to their hiding places. Soon the animals of the "nightshift" will be sound asleep. Another day begins in the rainforest of the Amazon River.

Rainforest Food Chains

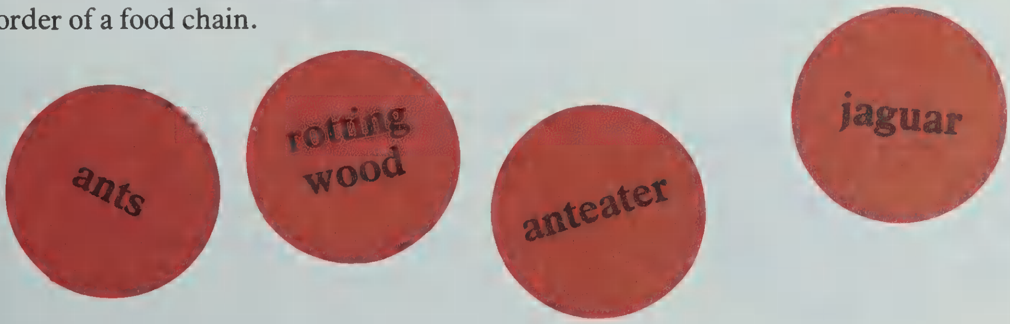
All animals must find food in order to live. They may eat other animals, insects, plants, or fruits. Some animals eat only one food. Others eat many kinds of food. In Canada people eat cows and cows eat grass. This is called a food chain.



In the Amazon rainforest the eagle eats the monkey and the monkey eats fruit.



Now sort out the following and put them in the correct order of a food chain.



Rainforest Animals

Wild pig

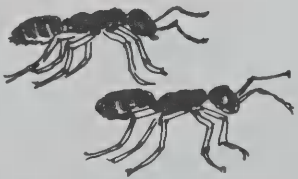
- has sharp, razor-like tusks
- travels in packs
- attacks other animals

Jaguar

- member of cat family
- pounces on other animals
- kills using sharp teeth

Anteater

- eats ants and termites
- laps up insects with sticky tongue
- gives off bad odour
- nickname: stinker of the forest



Army ants

- march like armies through the forest
- eat lizards, snakes, nesting birds and even animals in their path

Anaconda

- world's largest snake
- as big as 10 metres and 200 kilograms in weigh
- lives in water but hunts on land
- kills by squeezing victim to death

Eagle

- flies high above the tree-tops
- has sharp claws and beak

Monkey

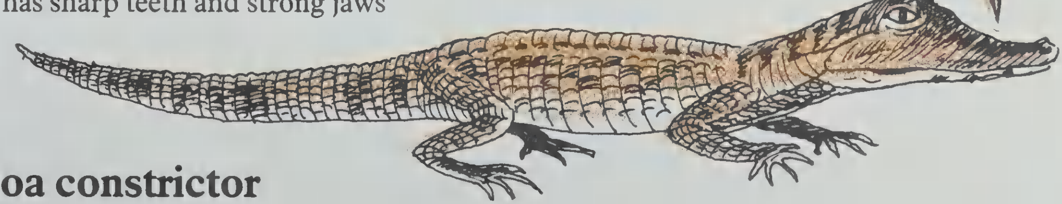
- nickname: acrobat of the forest
- swings from branches high above the ground
- eats fruit, insects, and birds' eggs

Macaw

- one of most colourful birds of the rainforest
- uses strong beak to crack Brazil nuts

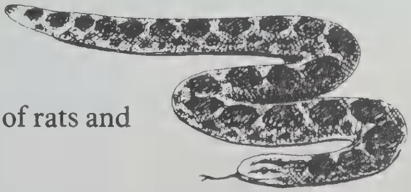
Cayman

- type of alligator
- will eat animals or even swimmers
- has sharp teeth and strong jaws



Boa constrictor

- lives in branches of trees
- waits motionless for victims
- kills by squeezing
- kept as pet in Amazon to keep house free of rats and mice



How Rainforest Animals Use Camouflage

The colour of some animals makes it difficult for their enemies to spot them. This is called camouflage. In Canada some rabbits turn white in the winter. They cannot easily be seen against the snow. In summer they turn light brown. Then they are hard to see in a forest or in a field.

In the rainforest the jaguar's spotted colours make it hard to see. The light and dark colours of many snakes make them difficult to spot. Camouflage is one way animals protect themselves.

Try and Find Me

Make a picture puzzle. Draw some animals and birds in their rainforest home. See if you can camouflage them so they are hard to spot. Colour the animals the same as they would appear in the rainforest. Then fill in the background around them. When you have finished your drawing, ask your classmates to find and name the animals you have drawn.

Nature's Hothouse

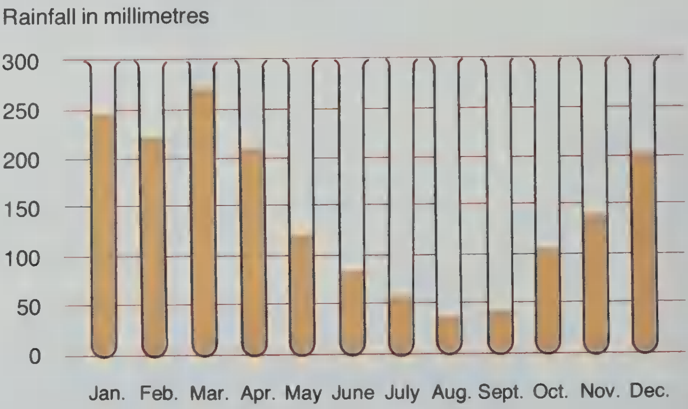
A tropical rainforest is nature's hothouse. It is a tropical area because it is always hot. It is also a rainforest because it rains almost every day of the year. Trees and plants grow unbelievably fast because the air is always steamy and wet.

There are no seasons as we know them in the rainforest. It is never so cold or dry that plants stop growing.

Be a Geographer

Another name for rainfall or snow is precipitation. Here is a precipitation bar graph for Manaus, Brazil.

Monthly Rainfall in Manaus



Manaus, Brazil (43 m)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Precip.	249	231	262	221	170	84	58	38	46	107	142	203

1. How much rain usually falls in June in Manaus?
2. In what month does Manaus get the *most* rain?
3. In what month does Manaus get the *least* rain?
4. Find out how these figures compare with your own area of Canada.
5. Add up the monthly amounts of rainfall to get the total for the year. Geographers use these descriptions when talking about amounts of yearly rainfall –
   - Sparse – Under 250 mm per year
   - Light – Between 250-499 mm per year

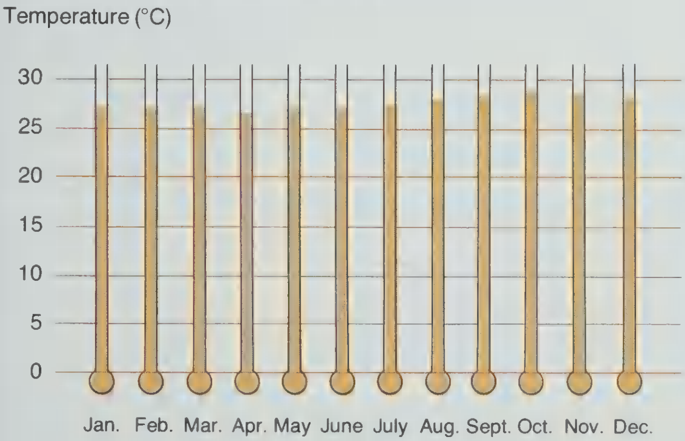
- **Moderate – Between 500-999 mm per year**
- **Heavy – Between 1000-1999 mm per year**
- **Very Heavy – Over 2000 mm per year**

What is the yearly amount of precipitation at Manaus? Can it be considered sparse, light, moderate, heavy, or very heavy?

What would be the answers to the same questions for the place in Canada where you live?

This graph tells us how hot Manaus is in the rainforest.

Monthly Temperatures in Manaus



1. **What is the highest monthly temperature? In which month does it occur?**
2. **Which is the coolest month of the year?**
3. **Are these temperatures warmer or cooler than in the place where you live?**

Manaus, Brazil (43 m)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Temp.	27.5	27.5	27.5	27.2	27.5	27.5	27.8	28.3	28.6	28.9	28.6	28.0

Indians of the Amazon

Maria and her family are Indians of the Amazon region. Indians live near the river and deep in the rainforest.

Maria lives in a large house shaped like a haystack. Her aunts, uncles, cousins, and grandparents live in the same house with her family. One house can hold about twenty families.

The houses of the Amazon Indians are made of materials from the rainforest. Tall wooden poles support a roof made of palm leaves. The whole house is held together by vines. No nails are used. There is a door in each house, but no windows.

Each village is built in the shape of a circle. Family houses are around the outside. In the centre is an open space called a plaza. This is where most of the activities of the village take place. Every day children play here and people meet to talk. In the centre of the plaza is a hut used only by the men of the village.

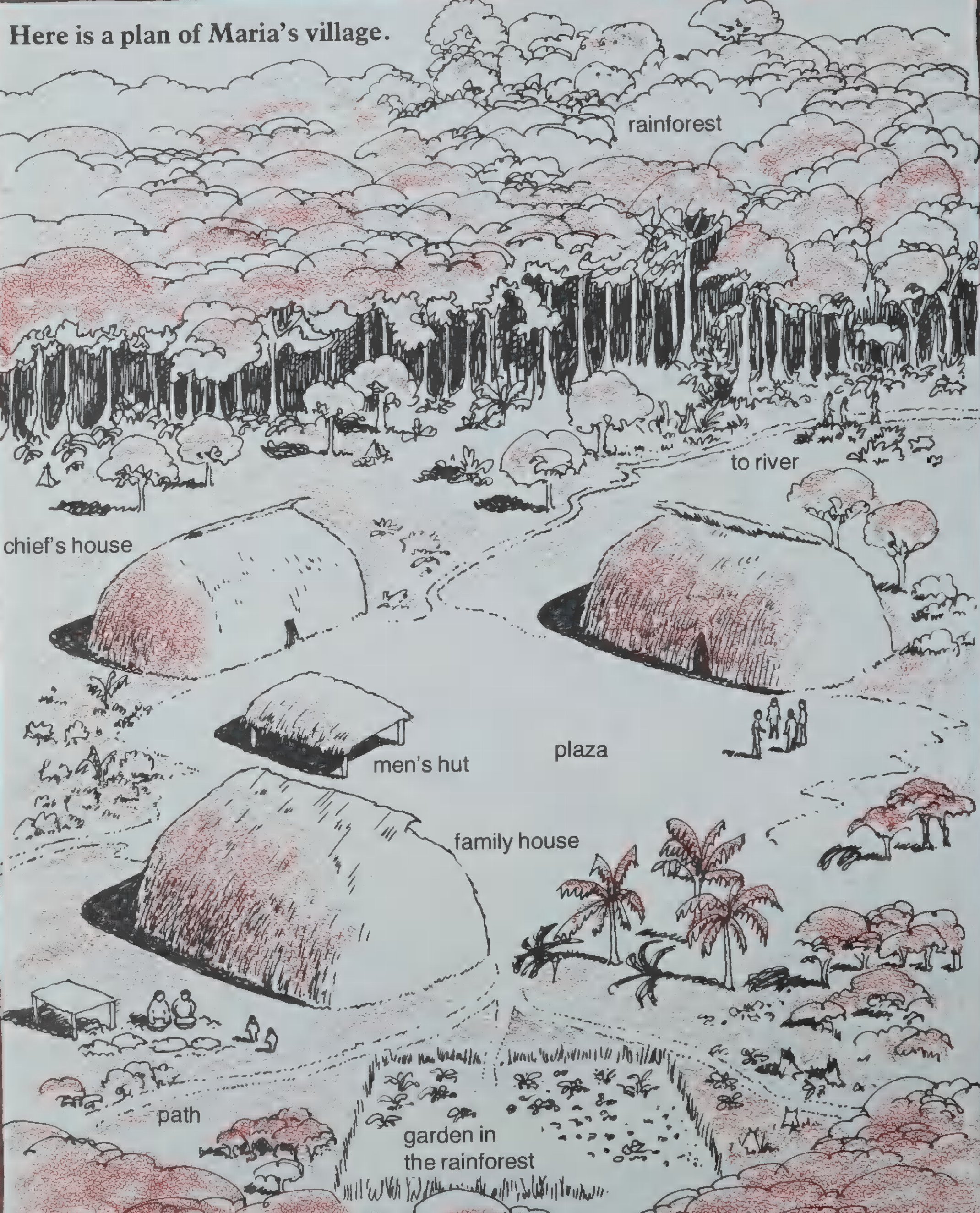
Indians sleep in hanging beds called hammocks. These beds swing between two poles. They are made of netting or strong cloth. Hammocks are the Indians' only furniture.

Each family has its own fire which is used for cooking and keeping mosquitoes away. The fire gives warmth in the cool, damp jungle nights. During the night Maria and the other family members must take turns getting up to tend the fire.

Before dawn, the temperature of the rainforest is at its lowest point. The Indians slip out of their hammocks and hurry to the river to take a bath. The water of the river is much warmer and more comfortable than the chilly air. About noon, the Indians take another swim in the river. This time they use the water of the river to cool off. By midday the heat of the rainforest is almost unbearable. Few clothes are needed.

Indians of the Amazon gave the world the idea for the hammock. Hammocks are often used on ships by sailors. Why?

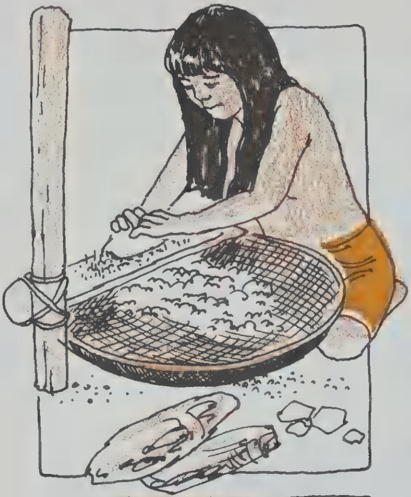
Here is a plan of Maria's village.

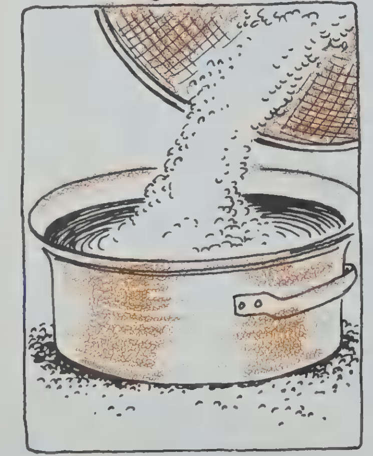


Food in the Rainforest

Everyone in Maria's family has a job to do. Her father and brothers are the hunters who keep the family supplied with meat and fish for food. They hunt the animals of the rainforest with bows and arrows, rifles, and blowguns. The Indians of the Amazon prefer the bow and arrow and the blowgun because they are silent. The noise of a rifle frightens the animals and they run away.

Maria's brother Richardo has made a blowgun from the stem of a plant. His blowgun is more than two metres long. A poisoned dart is placed in one end. Richardo blows air through the stem just the way you blow air through a straw. The poisoned dart speeds toward its target. Richardo is a sharp-shooter with his blowgun and seldom misses.





The members of Maria's family like to eat most animals. Monkeys, deer, and anteaters are favourites. Certain snakes are also eaten. Some people say that snake meat tastes like chicken. The eggs of alligators and turtles are considered great treats. They also love roasted termites.

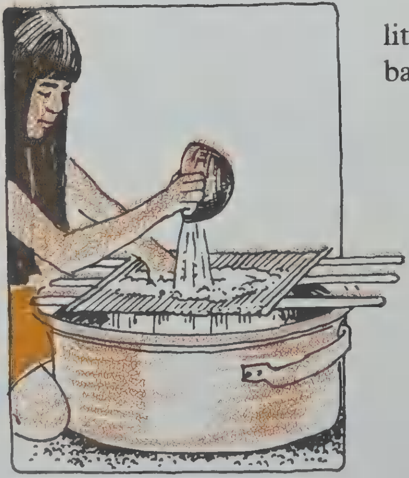
Maria, her mother, and sisters pick berries and fruit. They plant small gardens in clearings in the jungle. They prepare all the meals for the family.

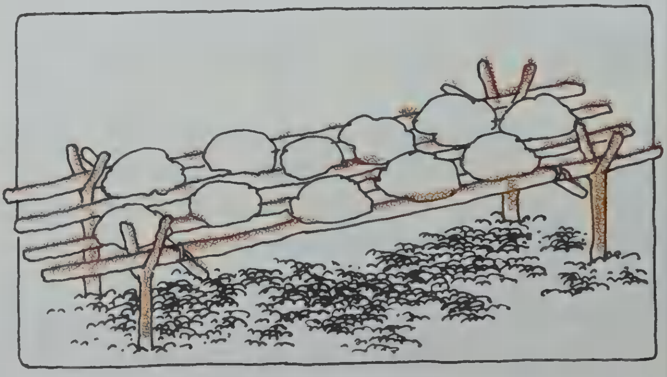
The most important food to the Amazon Indians is manioc. Manioc is as important to them as bread is to Canadians. Manioc is a fast-growing plant. Only its roots are eaten. Strange as it sounds, the manioc roots are poisonous. However, Indian women of the Amazon know how to get rid of this poison.

First, Maria's mother grates the manioc roots on boards studded with sharp fish teeth. Then she soaks the manioc in water and squeezes it to remove the poison juices. This process is repeated many times. Next, the manioc is dried in the hot sun. It can then be ground into flour and baked into flat cakes. Sometimes pieces of cooked fish are rolled into these cakes.

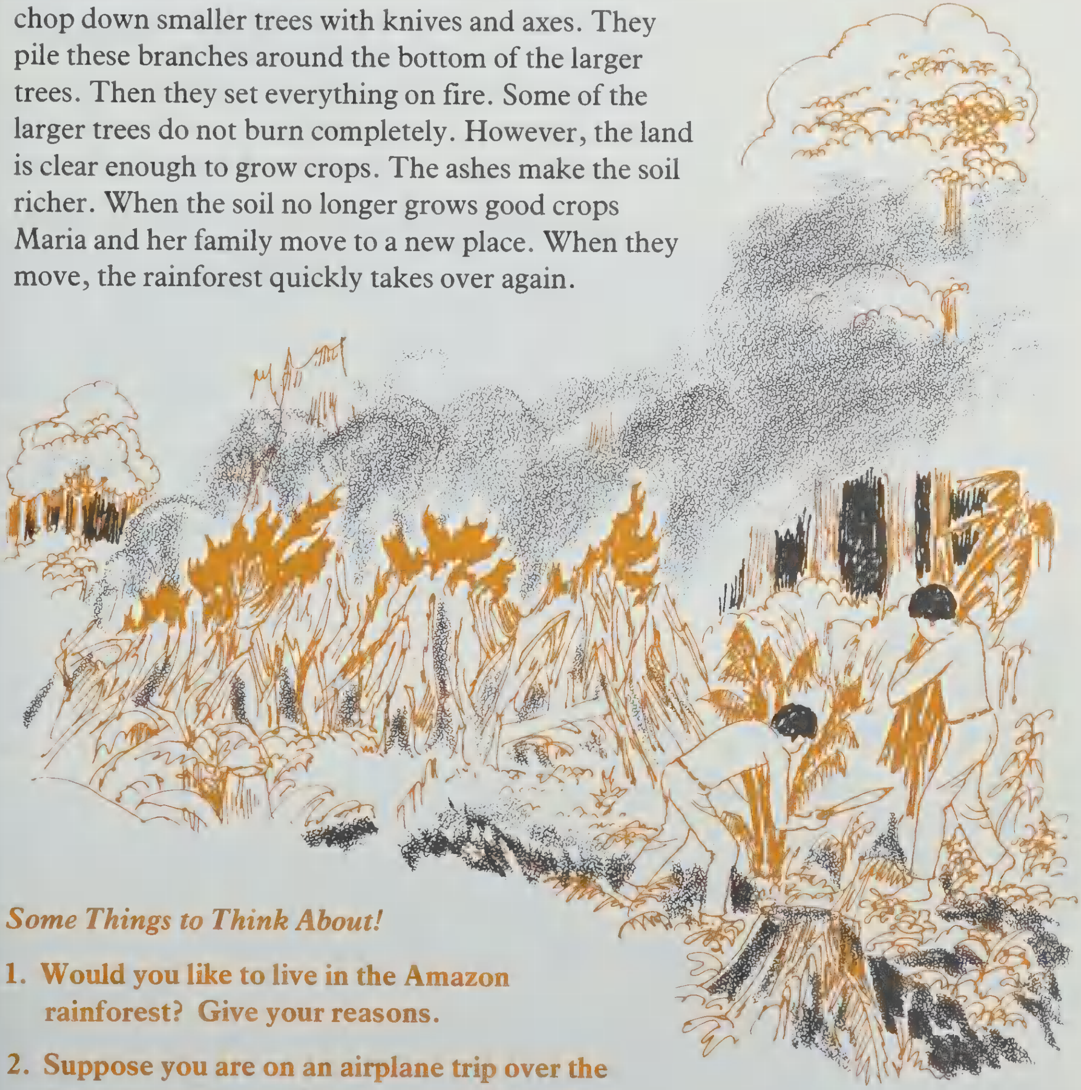
Canadians also eat manioc. We call it tapioca and usually serve it in the form of a pudding.

Besides manioc and yams, Maria's family grows a little cotton, tobacco, and plantains, which are like bananas.





Maria and her family clear the land for farming. They cut down and burn small parts of the rainforest. This is called slash and burn farming. This way of farming is especially suited to the rainforest. They chop down smaller trees with knives and axes. They pile these branches around the bottom of the larger trees. Then they set everything on fire. Some of the larger trees do not burn completely. However, the land is clear enough to grow crops. The ashes make the soil richer. When the soil no longer grows good crops Maria and her family move to a new place. When they move, the rainforest quickly takes over again.



Some Things to Think About!

1. **Would you like to live in the Amazon rainforest? Give your reasons.**
2. **Suppose you are on an airplane trip over the Amazon rainforest. Your airplane has engine trouble and has to land in a clearing in the jungle. Name five things you would like to have with you. Explain your reasons.**

Townspeople of the Amazon

There are only a few towns located along the Amazon. The largest town is Belem. It is near the mouth of the river. Much farther inland is the town of Manaus.

The people who live in the towns are Europeans. They are the grandchildren of early settlers from Europe. Many of these early settlers came from Portugal and Spain. These people still speak

Portuguese. There are also black people living and working in the towns along the Amazon. Black people from Africa were brought as slaves to South America. Today the grandchildren of these black people are free.

Townspeople of Belem and Manaus start work early in the morning. They prefer to work during the hours when there is less heat. They work in stores, factories, and offices.

The temperatures get very hot during the day. Instead of taking an hour for lunch, people take two or three hours for a siesta. A siesta is a period of rest. When the siesta is over, people return to work. They make up the hours of the siesta by working later in the cooler afternoon and evening hours.

Some people might think that the siesta means these Amazon dwellers are lazy. They would be wrong. The siesta means that the townspeople have learned how to live in a hot climate.

Rainforest Products

Name of the Tree	Products
rubber	sap used for making raincoats and tires
mahogany	hard wood used for furniture
balsa	light wood for wooden parts in airplanes
banana	fruit
cashew and brazil	nuts
carnauba palm	wax from leaves used in lipstick, shoe polish, and phonograph records
sapodilla	sap called chicle used for making chewing gum

Making Rubber

Europeans had never seen rubber until they came to South America. Here they saw Indians playing with balls made from rubber. The rubber came from trees that grew wild in the Amazon Basin. The Europeans learned to make things from rubber too. They made raincoats, bicycle wheels, and tires for cars. Manufacturing rubber became a very important business.

Workmen made cuts in the bark of rubber trees with sharp curved knives called jebongs. The sap or latex dripped from the cuts into cups. The workmen carried pails of latex to a central hut. The latex was poured slowly onto a pole in the smoke over a fire. Gradually the latex thickened and stuck to the pole. This process was called curing the rubber. Huge balls of thickened rubber (called bolos) were later taken in canoes to market and sold as raw rubber.

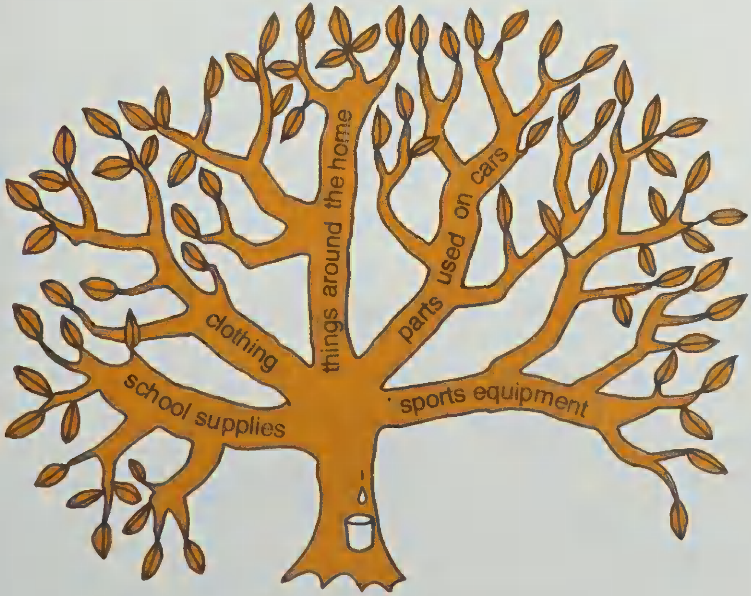
Soon new and better ways were found to raise rubber trees in other parts of the world. Seeds from rubber trees in the Amazon were used to plant rubber trees on large farms. These rubber trees were much easier to get at than the wild rubber trees in the Amazon rainforest. The rubber was cheaper to produce.

A Rubber Tree

Below is a sketch of a rubber tree. Copy the picture into your notebook. Draw on and label the following:

a) The gash in the rubber tree bark
b) The juicy latex dripping out of the gash into the cup

Now name the next three steps in the making of rubber:



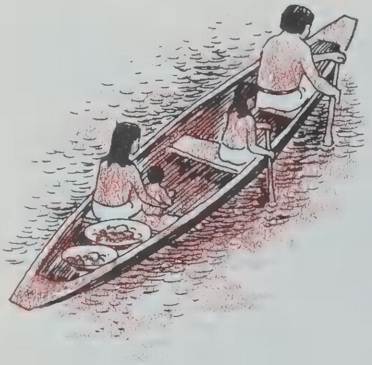
On the main branches of the tree are some uses of rubber. Think of examples of each and write them on the smaller branches of the tree.

People and Goods on the Move

There are few roads in the Amazon River Basin. The Amazon and its tributaries are the highways that carry people and goods.

The Amazon Indians use dug-out canoes. Dug-outs are made by hollowing out a single tree trunk. A dug-out canoe looks like a hollow cigar.

Today many people own small motor boats. Boats of all shapes and sizes chug up and down the river. Often the people form "trains" by linking their small boats together. In Belem many children go to school on a boat instead of a bus.



Ocean-going steamers can travel up the Amazon River because the water is very deep. These large ships can sail as far as Manaus without any trouble. These boats bring supplies to the river ports and carry away large amounts of lumber, nuts, and rubber.

1. **If you were sailing on an ocean-going steamer on the Amazon, what direction would you go from the mouth of the river to Manaus?**
2. **If you were on a motor boat chugging up the river from Manaus to Belem, what direction would you be going?**
3. **If you were travelling on a boat bus from Belem to the mouth of the Amazon, what direction would you be travelling?**
4. **Suggest some supplies ships might have to bring into Manaus from other parts of the world.**
5. **Draw pictures to show the types of transportation used in your own community and those used in the Amazon rainforest. What types of transportation are similar, and what types are different? How are the types of transportation changing in your own community and in the Amazon rainforest?**

Change in the Amazon

Today life along the Amazon is changing.

1. Roads for cars and trucks are being slashed through the jungle.
2. Railroads are being built to carry products to the river.
3. Small airports are being built in the rainforest.
4. Large machines are being brought in for farming and lumbering.
5. Doctors are trying to wipe out diseases like malaria, yellow fever, and typhus.
6. More crops and cattle are being raised on farms in the jungle to provide food.

Some of these changes will bring problems with them. Many Indian tribes may be destroyed. Indians will catch diseases that are new to them. Measles could kill a whole tribe of Amazon Indians.

The birds and animals of the jungle will also be in danger. Cutting down the trees of the forest to raise cattle or plant crops will destroy their homes. Other animals and birds will be hunted for their fur or feathers. There is the danger that certain kinds of jungle birds and animals may disappear altogether.

Something to Discuss

1. **Name some of the ways the Amazon rainforest is changing today.**
2. **List two good things that could happen because of these changes. Name two problems which these changes could bring with them.**
3. **Is change good or bad for the Amazon?**

Life in Three Places

Make a chart with these three headings. They are:

a) life in my area of Canada
b) life in Manaus and Belem
c) life among the Amazon Indians

Choose the phrases that best describe life in these three places. Some phrases will appear in only one column. Some phrases will be repeated in more than one column. You may not find all the details in the book. Make guesses from what you already know.
These are the phrases to put in the columns:

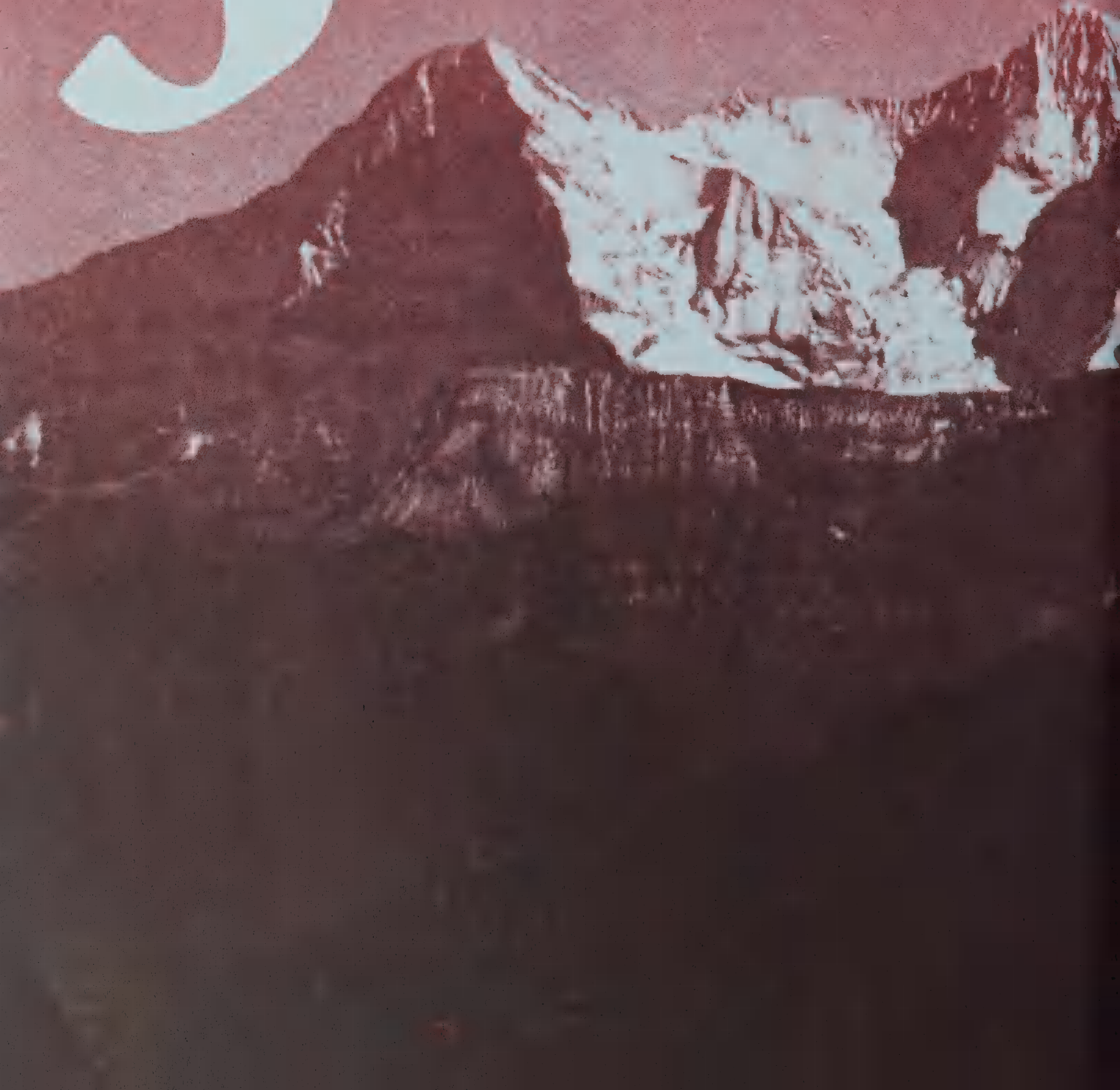
- Boats are the main way of moving goods and people.
- People plant crops for food.
- Homes contain modern appliances.
- People wear little clothing.
- People hunt for food.
- People buy most goods from markets and stores.
- People take a siesta.
- People use simple tools and weapons.
- People use many different tools and equipment.
- People use language to communicate.
- Homes are made with materials near at hand.
- People use slash and burn farming.
- People use cars, buses, and trains to move about.
- People operate many machines on farms.
- People have special clothes depending on the season of the year.
- People use scientific methods to cure sickness.
- People usually live close to their relatives.
- People live with immediate family.

What Did You Observe?

What features do people living in these three areas share? Suggest reasons why this is so.

3

THE MOUNTAINS

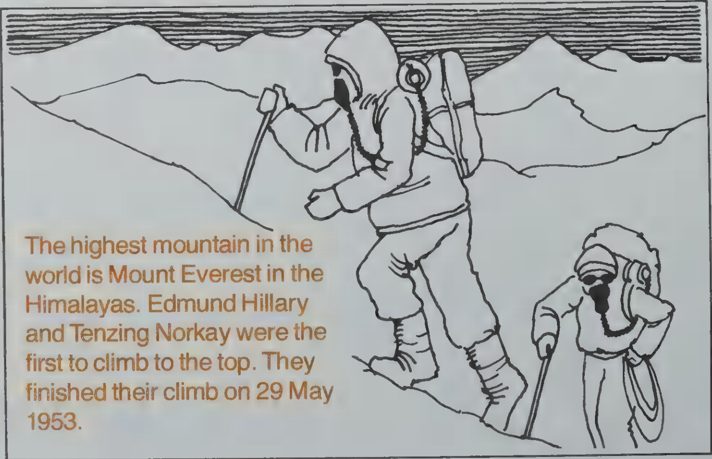


World Mountain Chains

Mark these seven mountain chains on a world map.

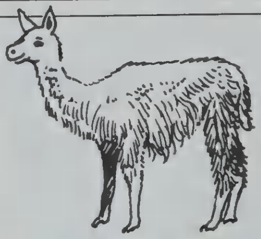
Reach for the Top

1. On a world map mark the names of the continents.
2. What continents have mountain chains?
3. What continent has two mountain chains? Label these on your map.
4. What are the names of the mountain chains of North and South America? Label these on your map.
5. On what continent would you find the Mountains of the Moon? Add these to your map.
6. Correctly label the mountain chain of Australia.
7. Name and mark the mountain chain found in Europe.
8. What continents contain deserts, rainforests, *and* mountain chains?



The highest mountain in the world is Mount Everest in the Himalayas. Edmund Hillary and Tenzing Norkay were the first to climb to the top. They finished their climb on 29 May 1953.

The highest mountain in the Alps is Mont Blanc. Marie Paradis was the first woman climber to reach the top in 1809.



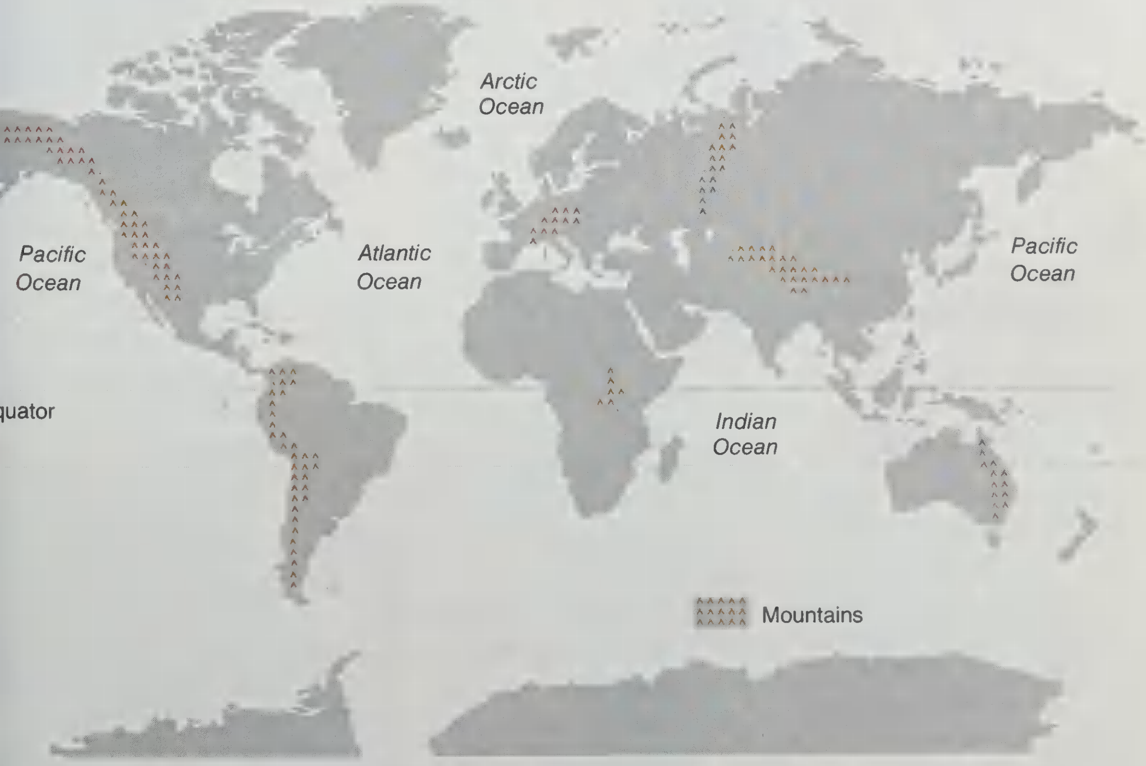
Llamas are used to carry heavy loads in the Andes Mountains. The Andes are the longest chain of mountains in the world.

Grizzly bears live in the Rocky Mountains. The highest mountain in the Canadian Rockies is Mount Robson.

The Ural Mountains mark the line between Northern Europe and Asia.

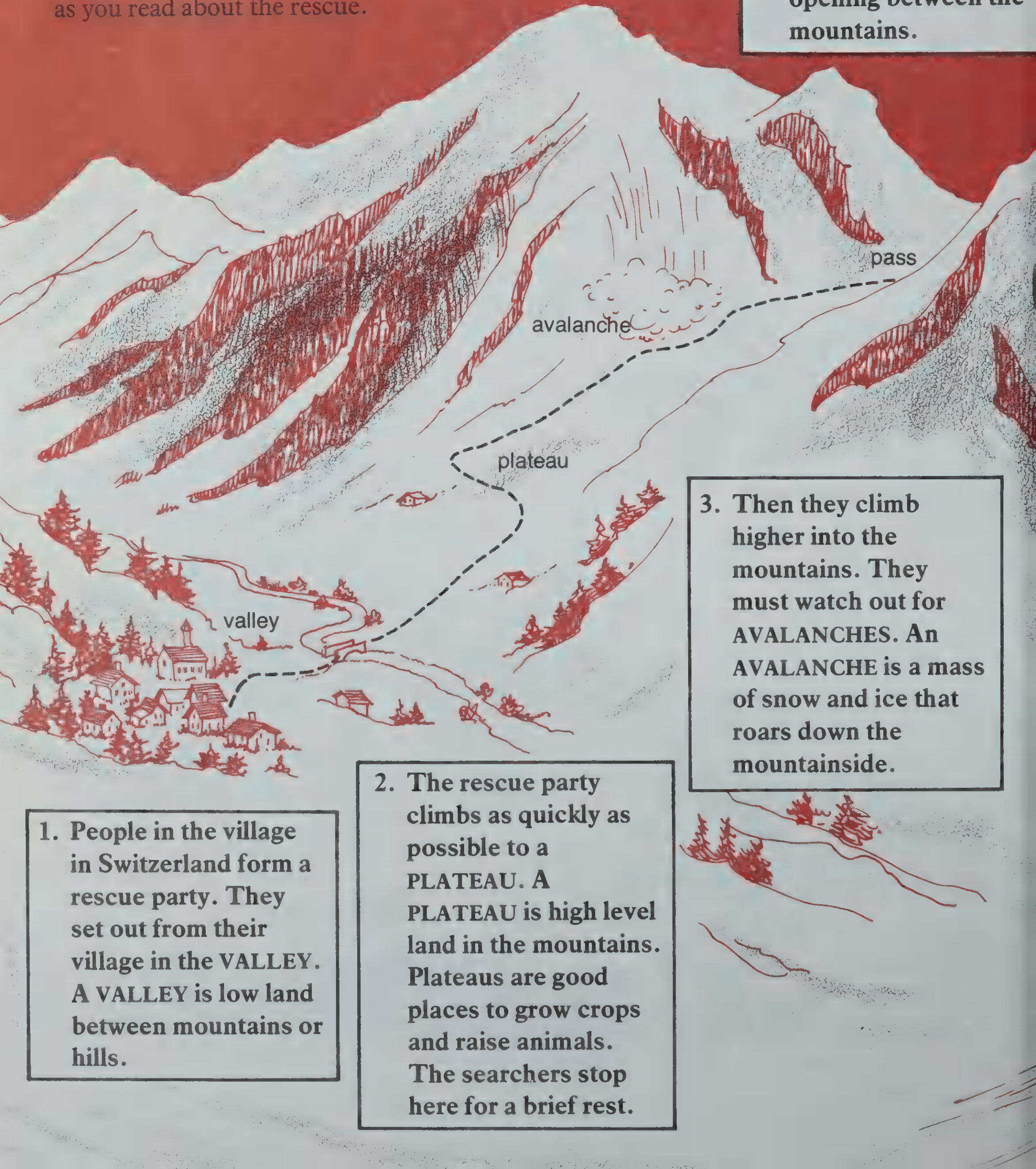
Near the Equator in Africa are the Mountains of the Moon. It is hot all year round at the bottom. The tops of these mountains are always covered with snow and ice. They are also partly hidden in fog and mist.

The Great Dividing Range are low mountains with rounded tops. Some people think these mountains look like dinosaurs stretched out sleeping. Can you imagine their bumpy backs with ribs poking through?

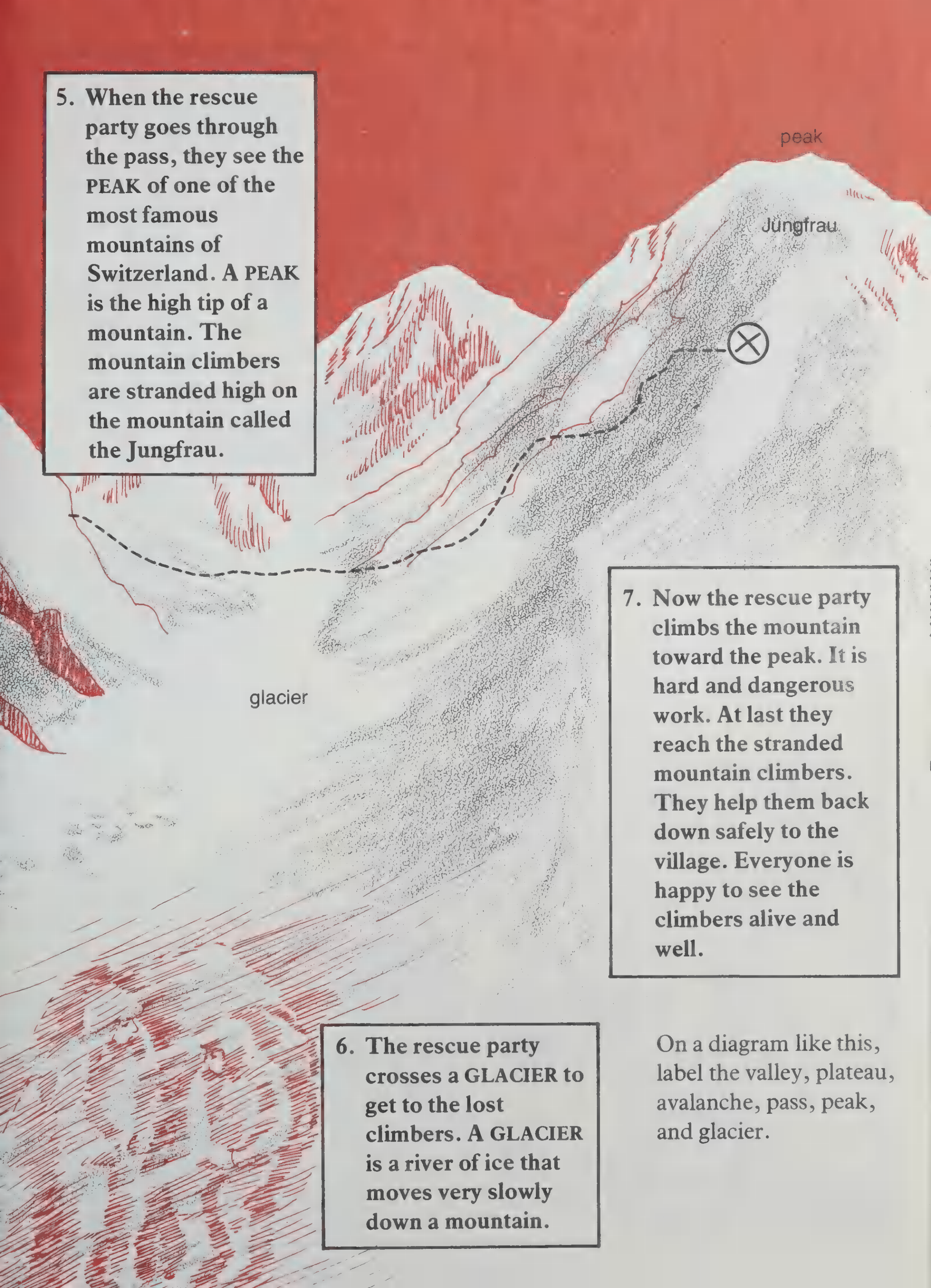


Help Rescue the Mountain Climbers

Some mountain climbers are lost in a blizzard! A rescue party sets out to find them. Follow the diagram as you read about the rescue.



1. People in the village in Switzerland form a rescue party. They set out from their village in the VALLEY. A VALLEY is low land between mountains or hills.
2. The rescue party climbs as quickly as possible to a PLATEAU. A PLATEAU is high level land in the mountains. Plateaus are good places to grow crops and raise animals. The searchers stop here for a brief rest.
3. Then they climb higher into the mountains. They must watch out for AVALANCHES. An AVALANCHE is a mass of snow and ice that roars down the mountainside.
4. The rescuers look for a PASS. A PASS is an opening between the mountains.



5. When the rescue party goes through the pass, they see the PEAK of one of the most famous mountains of Switzerland. A PEAK is the high tip of a mountain. The mountain climbers are stranded high on the mountain called the Jungfrau.

6. The rescue party crosses a GLACIER to get to the lost climbers. A GLACIER is a river of ice that moves very slowly down a mountain.

7. Now the rescue party climbs the mountain toward the peak. It is hard and dangerous work. At last they reach the stranded mountain climbers. They help them back down safely to the village. Everyone is happy to see the climbers alive and well.

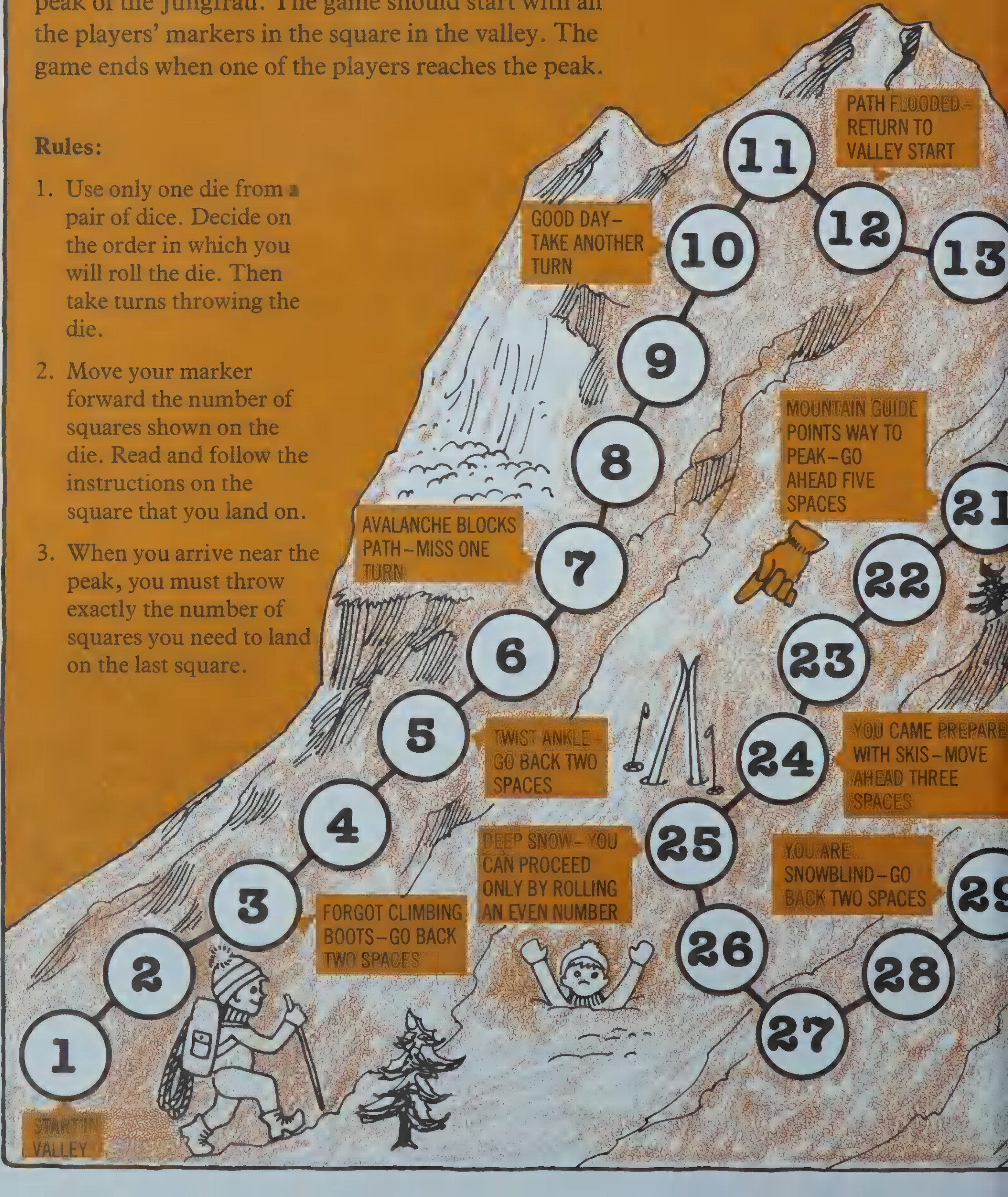
On a diagram like this, label the valley, plateau, avalanche, pass, peak, and glacier.

Game: Into the Alps

The purpose of this game is to be the first to reach the peak of the Jungfrau. The game should start with all the players' markers in the square in the valley. The game ends when one of the players reaches the peak.

Rules:

1. Use only one die from a pair of dice. Decide on the order in which you will roll the die. Then take turns throwing the die.
2. Move your marker forward the number of squares shown on the die. Read and follow the instructions on the square that you land on.
3. When you arrive near the peak, you must throw exactly the number of squares you need to land on the last square.



START IN VALLEY

FORGOT CLIMBING BOOTS–GO BACK TWO SPACES

TWIST ANKLE–GO BACK TWO SPACES

AVALANCHE BLOCKS PATH–MISS ONE TURN

GOOD DAY–TAKE ANOTHER TURN

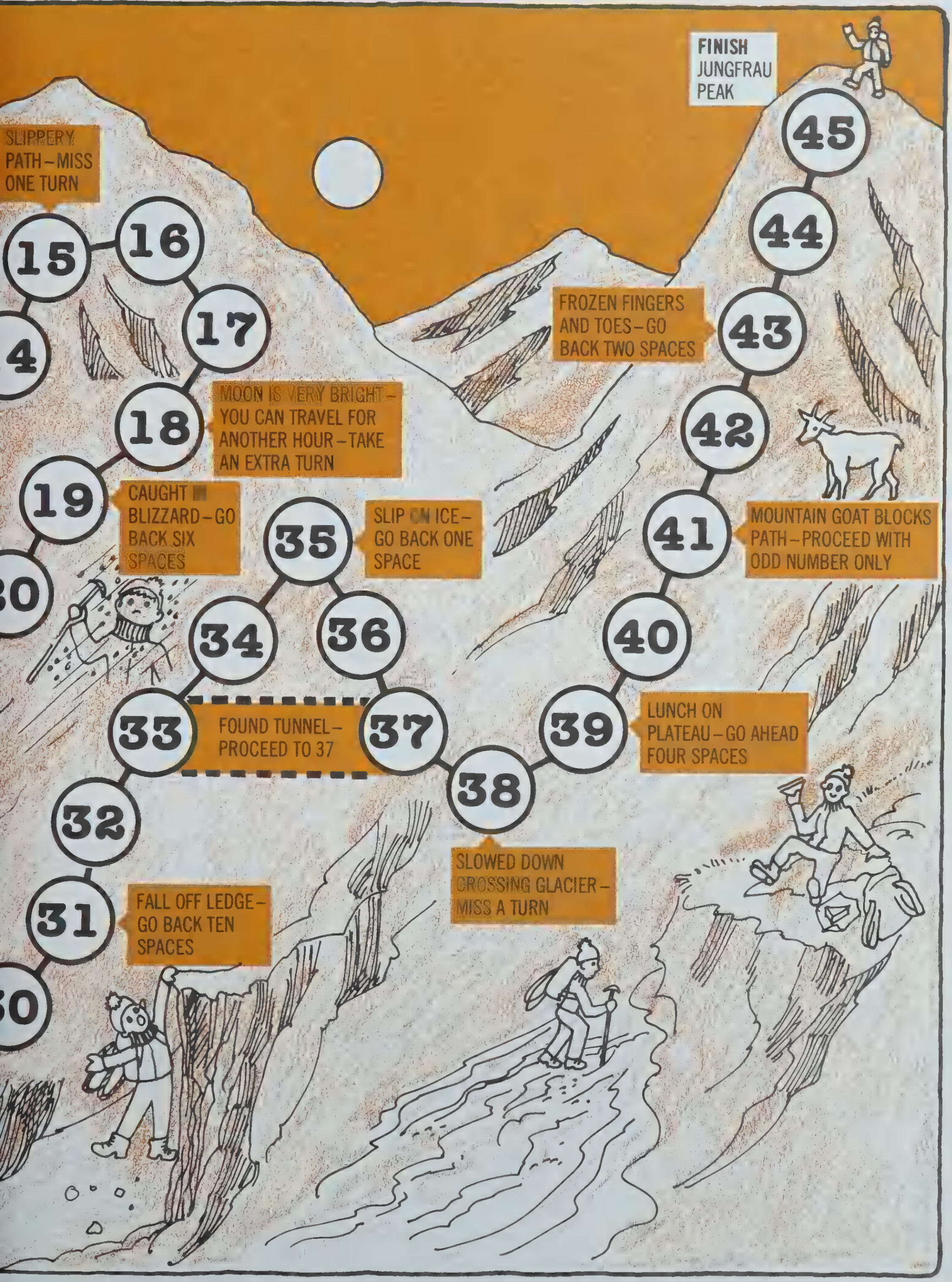
PATH FLOODED–RETURN TO VALLEY START

MOUNTAIN GUIDE POINTS WAY TO PEAK–GO AHEAD FIVE SPACES

YOU CAME PREPARE WITH SKIS–MOVE AHEAD THREE SPACES

DEEP SNOW–YOU CAN PROCEED ONLY BY ROLLING AN EVEN NUMBER

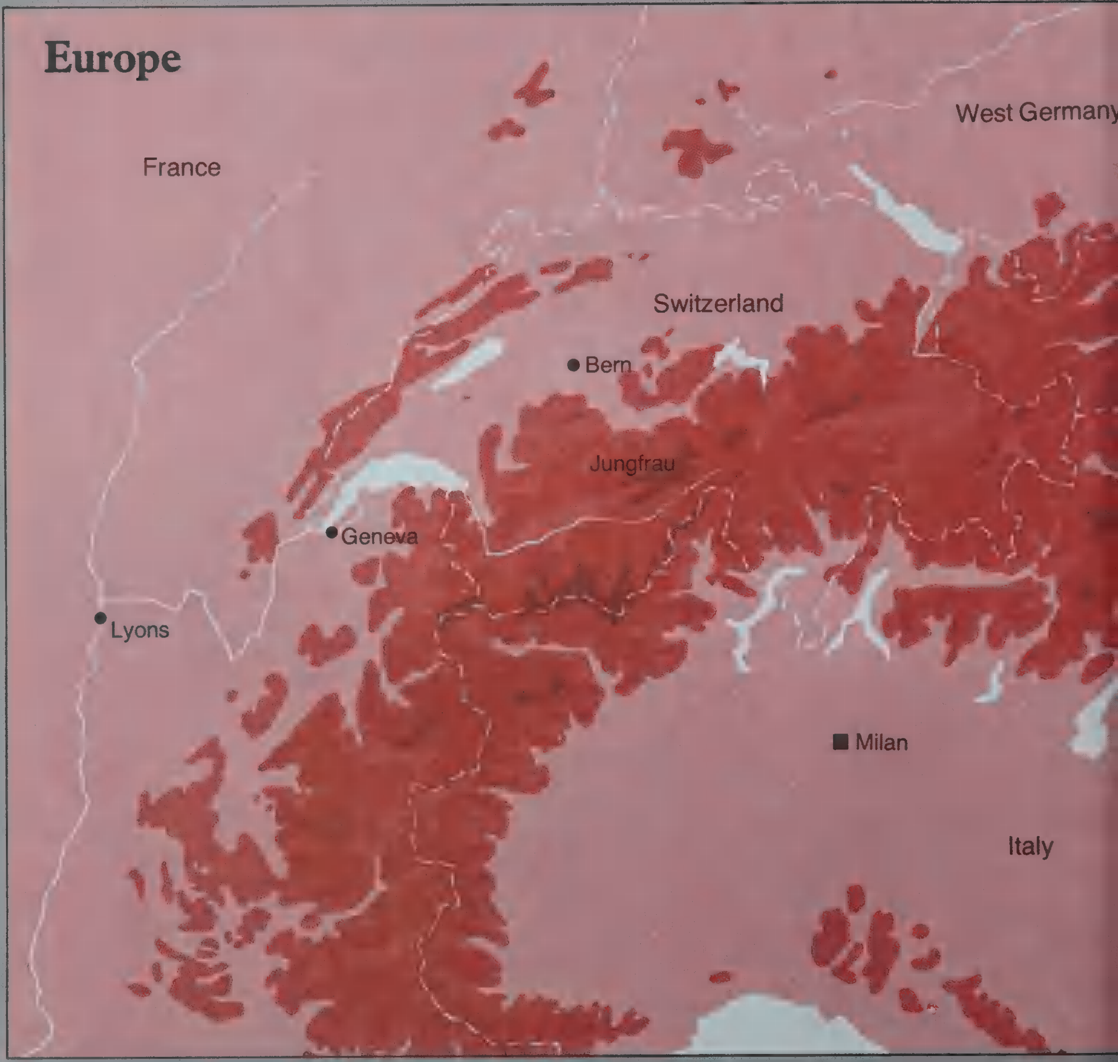
YOU ARE SNOWBLIND–GO BACK TWO SPACES


FINISH
JUNGFRAU PEAK
45
44
FROZEN FINGERS AND TOES – GO BACK TWO SPACES
43
42
41
MOUNTAIN GOAT BLOCKS PATH – PROCEED WITH ODD NUMBER ONLY
40
39
LUNCH ON PLATEAU – GO AHEAD FOUR SPACES
38
SLOWED DOWN CROSSING GLACIER – MISS A TURN
37
36
35
SLIP ON ICE – GO BACK ONE SPACE
34
33
FOUND TUNNEL – PROCEED TO 37
32
31
FALL OFF LEDGE – GO BACK TEN SPACES
0
0
19
CAUGHT IN BLIZZARD – GO BACK SIX SPACES
18
MOON IS VERY BRIGHT – YOU CAN TRAVEL FOR ANOTHER HOUR – TAKE AN EXTRA TURN
17
16
15
4
SLIPPERY PATH – MISS ONE TURN

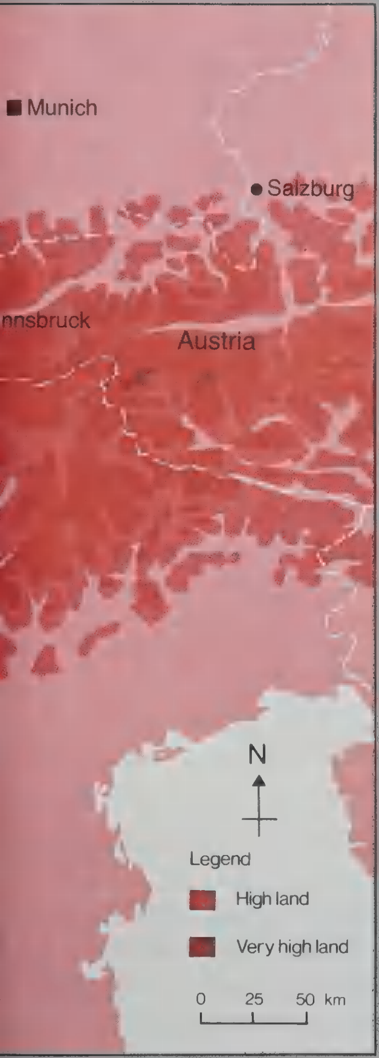
Mountains in Europe

The highest mountains in Europe are called the Alps. Look at the map of Europe below. Locate the Alps.

1. Name the countries where the Alps are found.



2. Many of the Alps are found in Switzerland. Locate Switzerland. Name the four countries that are the neighbours of Switzerland.
3. What mountain chain are the Jungfrau, the Matterhorn, and Mont Blanc in?
4. What country is the Jungfrau in? What country is Mont Blanc in?



Pierre and Gretchen in the Mountains

"Gretchen! Wake up! Wake up!" whispered Pierre. "It's time to get up! It's Inalpe day!"

It is very early in the morning. The sun is just beginning to peep over the mountains. Pierre is already out of bed and ready to go. Today is his favourite holiday. He has looked forward to this day for a whole year. He can hardly wait for it to begin.

Pierre Gerber will be ten years old on his next birthday. Gretchen has just turned seven. Their little brother, Rudy, is four, and their little sister, Christina, is two years old. They live with their family in a small village in Switzerland. The village snuggles at the bottom of high mountains. Almost everyone in Switzerland lives on the side of a mountain, at the bottom of a mountain, or within sight of mountains.

Most families in their mountain village are farmers. They raise milk cows. In fact, there are more cows than people in their tiny village!

The Gerbers are very proud of their large herd of milk cows. The cows provide milk, butter, cheese, and meat for the family. The Gerbers sell extra milk to dairies and chocolate factories. With the money they earn from the sale of the milk, they buy other things they need.

Inalpe Day – June

Pierre and Gretchen gobble down breakfast and race to the barn. Pierre flings open the barn door.

"It's Inalpe day," he shouts to the cows. "We're all going up the mountainside! Holidays are here! Winter is over. We are taking you up to the fresh pastures high above the village. The whole family is going."

"Come on, Pierre. Let's get our cows ready," Gretchen says. "You get the tin bells down from the shelf."

The children hang a large bell on a collar around the neck of each cow. The tinkling bells will always tell them where the cows are. If a cow is lost, the sound of the bell will help to find it.

Later, they will pick some wild flowers and make a crown for Emily. They want everyone to know she's their favourite cow.

Right now, Pierre and Gretchen have to start herding their cows into the street. All their neighbours are doing the same. Dogs are barking and people are rushing about. At last everyone in the village is ready.

"Mr. Zeeder is ready to start the Inalpe parade!" shouts Gretchen. Mr. Zeeder is the chief herder for the village. He is in charge of all the cows while they are on the mountain. Herdsmen are like cowboys. In Canada cowboys travel on horses or in trucks. In Switzerland herdsmen look after their cows on foot.

Mr. Zeeder blows his horn. That is the signal for all the people to start moving with their cows up the mountain paths.

Mr. Zeeder goes first. Behind him herders help to keep the cows moving along. After the cows come the other villagers. Pierre's mother has packed food, blankets, and clothes for the family. She has loaded them onto their little mule. Gretchen and Pierre take turns carrying their kitten in a large basket. On the way they stop to pick berries and cool their feet in mountain streams.

By late afternoon they reach the first meadows high above the village. Everyone will stay here with the cows for the next few weeks.

"The first thing we should do," says Mother, "is to open up the chalet." The chalet is their mountain cabin. The family starts to make up the beds.

"Then we will check the stable," says Father. "We should bring fresh water from the stream for the animals to drink."

As soon as the chores are done, all the children build a bonfire. Everyone is hungry after the long climb and gathers around the fire for a picnic.

The villagers eat raclet, a favourite Swiss meal. A large piece of cheese is held near the bonfire. The cheese begins to melt. Then the softened outer layer is scraped away. The cheese is eaten with boiled potatoes, fresh bread and butter, and juicy pickles. Pierre enjoys three helpings of raclet. He washes it down with several cups of milk. For dessert, both Pierre and Gretchen enjoy a chunk of Swiss milk chocolate.

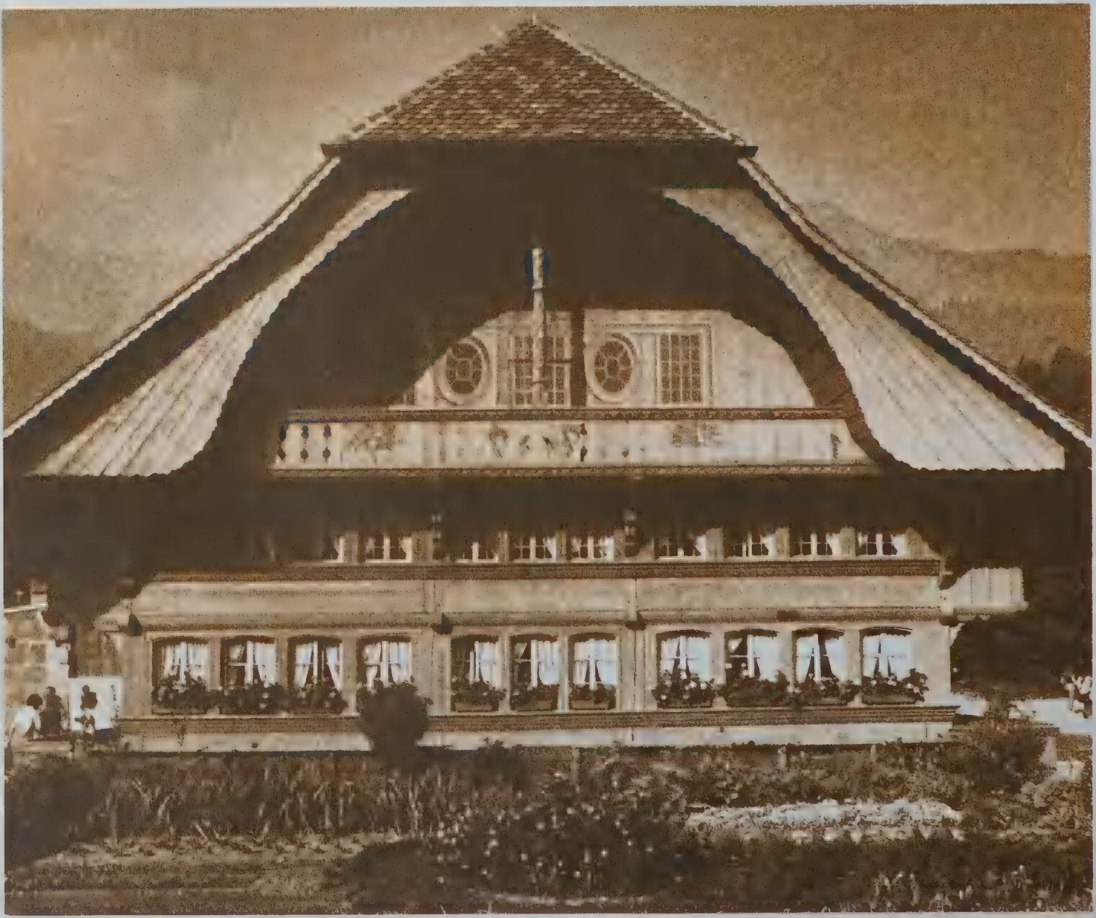
The Gerber family sits around the bonfire laughing and talking with their neighbours. They sing some favourite Swiss songs. Finally Father says, "We had better round up the cows. Soon it will be dark."

Pierre and Gretchen go into the meadows to find their cows. They herd them back to the stable for milking. While their parents milk the cows, Pierre and Gretchen carry the pails of milk to the chalet. Tomorrow the Gerbers will make cheese from the milk collected today.

A little while later the children climb into big, soft beds in the chalet. They sleep under huge feather covers that look like oversized pillows. The covers keep them warm in the chilly night air of the mountains. Soon the children are fast asleep after an exciting day of Inalpe.

Homes in the Swiss Mountains

The Gerber family lives in a chalet during the summer. Many chalets in the Swiss mountains are made of wood. They are built from trees cut down in the forests. A chalet has a sloping roof so that the winter snow slides off easily. The roof hangs down over the edge of the house. This overhang protects the house during the winter storms. Most of the chalets have balconies. In the summer the Swiss like to fill their balconies and window boxes with colourful flowers.



Make a Mural

Swiss mountain families are busy all year long. Make a large mural to show the activities of the Gerber family. Divide the mural paper into four sections. Label the first picture "Spring". You will add three more pictures to the mural later. In your pictures show the Gerber family at work and play. Try to show

- what Gretchen and Pierre would be doing
- what would be going on in the village
- where the cattle would be
- what the weather would be like in the mountains

Cheese-Making in the Swiss Mountains

Do you like cheeseburgers? Have you ever tried Swiss cheese on your hamburger? Have you eaten Swiss cheese with a cracker? Switzerland is famous for its cheese. Swiss cheese is sold in stores around the world.

Two famous Swiss cheeses are emmentaler and gruyère. You can recognize these cheeses because they are full of tiny holes. Both are pale yellow in colour. These cheeses are named for the area in Switzerland where they are made.

All over Switzerland cheese is made in much the same way. Cheese-making begins high up in the mountains where the cows spend their summer days. Sometimes the cheese is made right on the mountain sides. Sometimes the fresh milk is brought down to the village dairies in little carts or trucks. Milk is poured into large copper pots. Then the milk is heated. This causes the milk to separate into curds and whey. The whey is a thin, watery liquid that is drained off. What is left are curds. Curds are thick and look like cottage cheese.

Next, the curds are pressed firmly into round wooden forms. The forms are in the shape of wheels. The large wheels of cheese must sit on a shelf in a cellar. This allows the cheese to ripen. The ripening may take several months. It must ripen before it can be eaten. Every two days the cheeses must be turned over and rubbed with salt. Gradually a yellowish-brown skin forms on the outside of the wheels of cheese. Inside the cheese there are changes taking place too. Bubbles of gas form inside the cheese. Those bubbles cause the holes which make Swiss cheese famous.

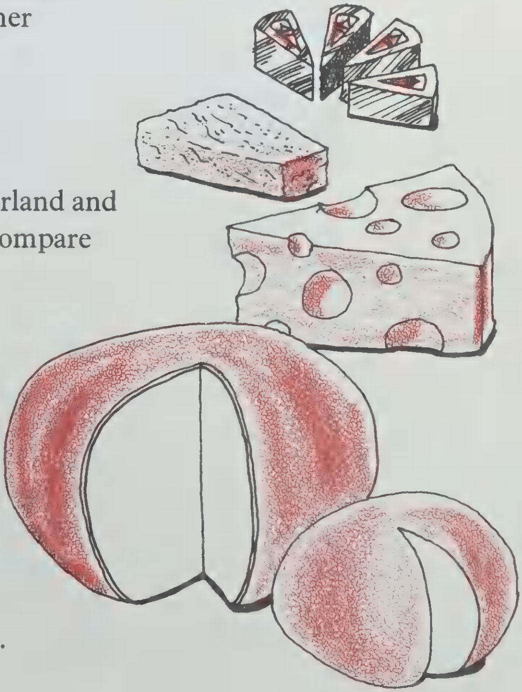
The Swiss make forty to fifty different kinds of cheeses. About half of all cheese made in Switzerland is sold outside the country. Cheese is one of the most important goods that Switzerland sends to other countries.

Have a Cheese-Tasting Party

Try to obtain a variety of cheeses from Switzerland and other parts of the world, including Canada. Compare the cheeses in a chart under these headings:

- country where made
- colour
- taste
- smell
- hardness
- texture (solid or with holes)
- ingredients (cows' milk, goats' milk)
- price

Rank the cheeses according to your favourites.



Summer in the Alps

Gretchen and Pierre enjoyed their holiday at their chalet on the mountainside. One day Mrs. Gerber told Gretchen and Pierre the sad news. "It is time for Mr. Zeeder and a few of the older boys to leave us. They will take all the cows high up in the mountains for the summer. There will be lots of green grass for the cows to eat. Tomorrow we will say goodbye to our cows and go back down to the village."

"Have you enjoyed your holiday here in the chalet in the mountains?" asked Mrs. Gerber.

"Oh, yes!" exclaimed Gretchen. "I've had lots of fun here!"

"It has been one of our best holidays. I am sorry that we have to go back," said Pierre. "I wish that I could go with Mr. Zeeder. I would love to spend the whole summer in the high meadows."

"You shall go," promised Pierre's mother, "when you are a little older. But now there is summer work to be done in the village. And both of you must help."

While their cows are up in the mountain meadows, the farmers of the village are busy. They are cutting and storing hay. Every bit of precious grass is cut and dried to make the hay. Even the grass along the roadside is used. Piles of hay are pulled to the barns by tractors. Hay is stored in barns to feed the cattle during the winter months.

Pierre and Gretchen help their mother every day in her vegetable garden. She grows peas, carrots, cabbage, onions, spinach, and tomatoes. There is also fruit to be picked in the orchard. Pierre and Gretchen's mother uses the fruit to make apricot jam and cherry preserves.

Sometimes Pierre works for his uncle who owns a small hotel in the village. He washes dishes in the kitchen or peels vegetables for the cook. There are several small hotels in the village because many tourists visit the mountains for their summer and winter holidays.

Continue Your Mural

Add the second section to your mural. Label this picture "Summer." In your picture show

- **what Gretchen and Pierre would be doing**
- **what work would be going on in the village**
- **where the cattle would be**
- **what the weather would be like in the mountains**

Tourism

Thousands of visitors or tourists travel to Switzerland every year. In the summer they enjoy the fresh air and the beautiful mountain scenery. Many visitors like to hike through the mountains. Some people find adventure in climbing all the way to the peaks of the mountains.

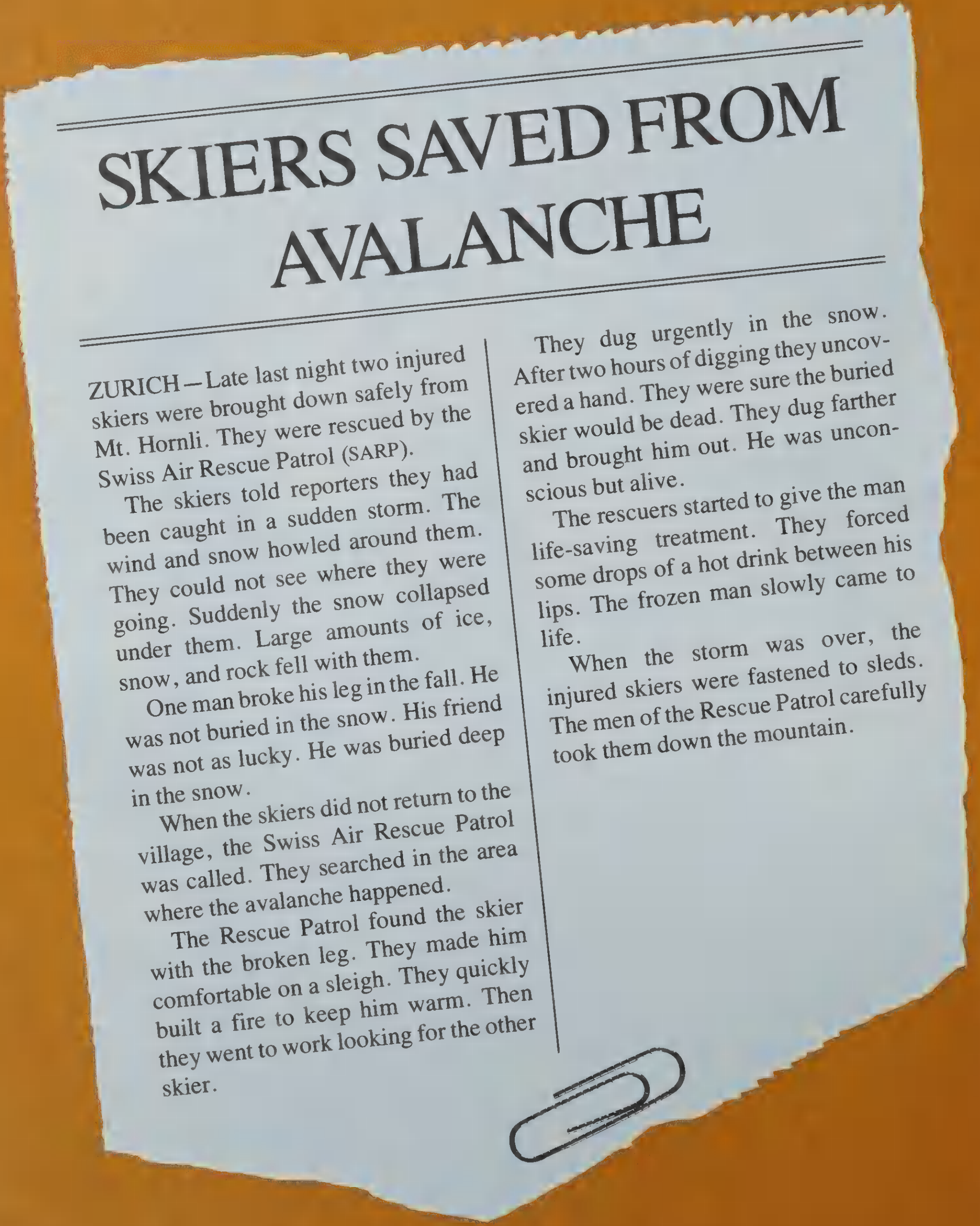
The Swiss welcome tourists warmly. Some Swiss people rent rooms in their own houses to overnight visitors. In almost every village there are also small hotels for tourists. It is in one of these small hotels that Pierre works for his uncle.

Tourists also visit Switzerland in the winter. There is always plenty of snow for winter activities. Ice skating, tobogganing, ice hockey and curling are popular sports.

Most tourists come for the skiing. The Swiss have built ski tows and cable cars to carry the skiers up the steep slopes. Beginners and experts enjoy the run down the trails. On some very high mountains there is snow even in the summer. It is possible to see people in July skiing in shorts and t-shirts.

Many Swiss people work as ski instructors in the winter. They give skiing lessons to the tourists. They guide visitors to the safest and best places to ski. After all, nobody knows these mountains better than the Swiss villagers!

Excellent skiers have joined the Swiss Air Rescue Patrol. These people are always ready to rescue an injured mountain climber or skier. Sometimes they have to go out to find skiers who are lost in a blizzard. Pierre's cousin, Fritz, belongs to the Rescue Patrol. Once he helped rescue two injured men from the mountainside. Newspapers in Switzerland told about this brave act.



SKIERS SAVED FROM AVALANCHE

ZURICH—Late last night two injured skiers were brought down safely from Mt. Hornli. They were rescued by the Swiss Air Rescue Patrol (SARP).

The skiers told reporters they had been caught in a sudden storm. The wind and snow howled around them. They could not see where they were going. Suddenly the snow collapsed under them. Large amounts of ice, snow, and rock fell with them.

One man broke his leg in the fall. He was not buried in the snow. His friend was not as lucky. He was buried deep in the snow.

When the skiers did not return to the village, the Swiss Air Rescue Patrol was called. They searched in the area where the avalanche happened.

The Rescue Patrol found the skier with the broken leg. They made him comfortable on a sleigh. They quickly built a fire to keep him warm. Then they went to work looking for the other skier.

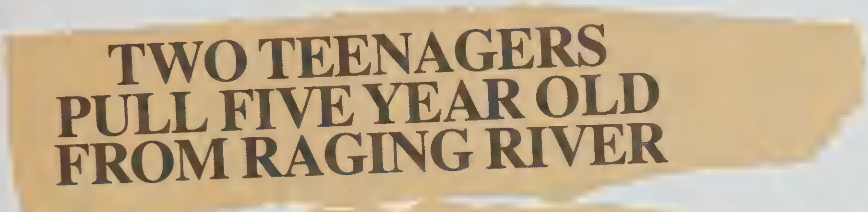
They dug urgently in the snow. After two hours of digging they uncovered a hand. They were sure the buried skier would be dead. They dug farther and brought him out. He was unconscious but alive.

The rescuers started to give the man life-saving treatment. They forced some drops of a hot drink between his lips. The frozen man slowly came to life.

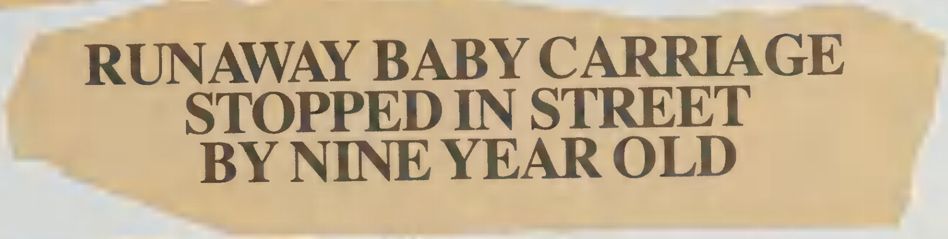
When the storm was over, the injured skiers were fastened to sleds. The men of the Rescue Patrol carefully took them down the mountain.

Be a Reporter

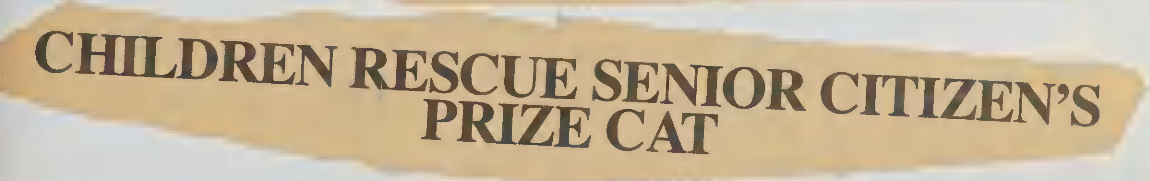
You are reporters for your local newspaper. You are asked to report on a dramatic rescue. Choose one of the situations below or one of your own. Write a column for your newspaper.



TWO TEENAGERS
PULL FIVE YEAR OLD
FROM RAGING RIVER



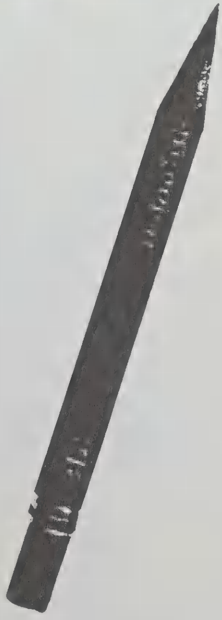
RUNAWAY BABY CARRIAGE
STOPPED IN STREET
BY NINE YEAR OLD



CHILDREN RESCUE SENIOR CITIZEN'S
PRIZE CAT

Remember this when you write your newspaper story –

1. A newspaper story gives the most important information first.
2. A newspaper story answers these questions:
   Who – Who is in the story?
   What – What happened?
   Where – Where did the story take place?
   When – When did the story happen?
   Why – Why did the story happen?
   How – How did the story take place?
3. A news story has very short paragraphs.
4. A news story is given a catchy title.



Hl. St

Exalpe – October

"I hear the bells! I see them coming!" shouts Pierre as he runs into the house.

It is the end of the summer. Mr. Zeeder and the herders are leading the cows down the mountainside. Mr. Zeeder knows that any day now snow will start to fall on the mountain tops. It is time to bring all the cows back down to the village. There the cows can stay safely in the barns for the winter.

What a lot of excitement there is in the village when the cows arrive. All the families hurry to pick out their own cows.

"I see Emily!" cries Gretchen. "And look, she has two little calves with her! They are beautiful. What shall we name them?"

The farmers thank Mr. Zeeder for the fine job he has done looking after the cows. They admire the calves that were born during the summer on the high pastures. Now each family must look after its own cattle for the winter. But next spring Inalpe will return. The cows will once again make the long climb to the mountain pastures.

Continue Your Mural

Add a third picture to your mural. Label the picture "Autumn". Show the activities that take place in October when the cows return to the village for their winter stay.

Chocolate

Did you know that chocolate is often made with milk? Did you know that some of the finest chocolate in the world comes from Switzerland?

Some of the milk from the Gerber cows is sent to chocolate factories. There the milk is carefully mixed with sugar. Then cocoa is added to give the chocolate flavour. Sweet smells fill the air while the candy is cooking.

Special machines form the chocolate into shapes. Sometimes it is made into bars. At Easter the machines make egg and rabbit shapes. For Christmas the candy is formed into stars and Christmas trees. Bite-sized candies are filled with nuts, fruits, and other delicious fillings. Then the chocolates are wrapped in coloured papers. They are packed in decorated boxes. From the chocolate factories in Switzerland, the candy is sent to all parts of the world.

Watches and Clocks

Swiss people are famous for making clocks and watches. Some of the first Swiss watchmakers were farmers. They worked on the watches during their spare time in the winter. Each person made just one part of a watch. He might make the dial, the springs, or the hands for the watch.

Farmers taught their watchmaking skills to their children. Sometimes the whole family helped to make parts for watches during the long winter months.

The Swiss clockmakers also made huge mechanical clocks. They were placed on church towers and public buildings. They made a famous clock for Bern, a city in Switzerland. Tourists still visit Bern to see this clock. Every hour the Bern clock puts on an amazing show. Roosters crow, bears dance, and a clown shakes his fist at the clock above him. This old clock has been telling the time this way for over 450 years.

Watchmaking in Switzerland today is a very big business. Factories produce millions of watches every year. Swiss watches are well known because they tell exact time. Airline pilots use them to fly their airplanes on time. Judges at the Olympic Games use them to time the sports events. Watches, cheese, and chocolate are the products that make Switzerland famous.

How did people tell time before they had watches and clocks? Why have watches and clocks become very popular?

Speaking of Time

"Time" comes up often in everyday speech. Think of sayings that have the word "time" in them. Write each saying on a card or small piece of paper. Here are some examples.

TIME FLIES

TIME OUT

PASSING THE TIME OF DAY

TIME TO GO

Play a game of charades. Divide the class into two teams. A player from each team picks a saying about time. Without saying anything, the player acts out the saying for his/her team. Two minutes are given for the rest of the team to guess the saying. Keep time with a stopwatch.

KILLING TIME

Finish Your Mural

Add the last picture to your mural. Label the picture "Winter".
Try to show

- **what Gretchen and Pierre would be doing**
- **what work would be going on at the farm in the village**
- **where the cattle would be**
- **what the weather would be like in the mountains**
- **what the other villagers would be doing**

Moving About in the Alps

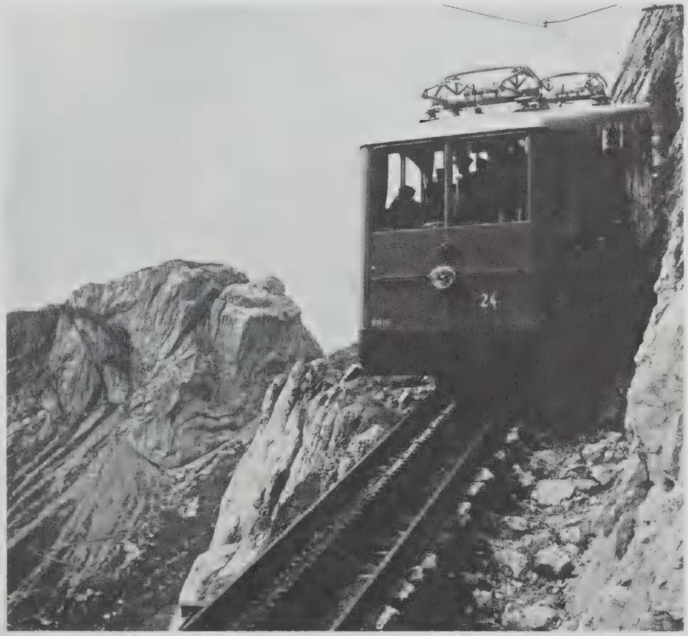
In the early days there were only a few rough paths over the mountains. Soldiers and traders followed these trails on foot. These passes were often steep and dangerous, especially in the winter.

About a thousand years ago there lived a holy man, named Bernard. He took pity on mountain travellers and built huts to shelter people travelling through the pass near where he lived. Bernard and his followers sent out rescue parties to search for people lost in snow storms. They raised big, furry dogs to help them. These dogs could sniff out people buried in avalanches. Today this famous breed of dog is called the St. Bernard and the mountain pass in Switzerland is the St. Bernard Pass.

Today Swiss engineers help mountain travellers. They build railroads which twist and turn through the mountains. Trains run along bridges across the rivers and valleys. Where the snow is deep, the engineers dig tunnels. A tunnel is an underground route carved through the mountain.

The Simplon Tunnel is the longest in Switzerland. It is twenty km long. Trains run right through the middle of the mountains. Railroads connect all parts of Switzerland. They also link Switzerland with its neighbours, France, Italy, West Germany, and Austria.

The Swiss have even developed a special railroad to climb very steep mountains. This is called a cog railway. These trains have a centre wheel with cogs, or teeth, on it. The cogs fit into a rail that runs between the tracks. The cogs hold the train securely and make it possible to climb steep slopes.



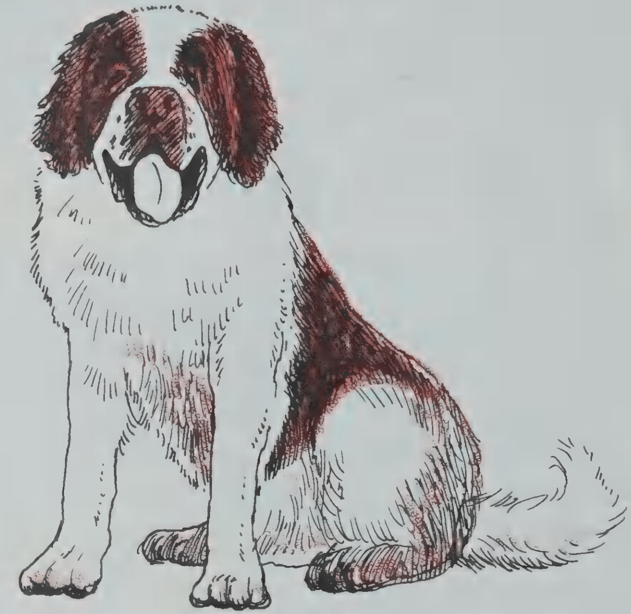
Today there are highways through the passes. Taking a bus trip is one of the best ways of viewing the beautiful mountain scenery. But driving a big bus along the sharp curves is very hard for the drivers. Now you can guess why Swiss bus drivers are among the best in the world.

In some places in Switzerland there is another way to go over the mountain peaks. You can travel by cable car. The cable car can take you high into the mountains. The picture shows how the car is held on the strong, thick wire cable. Far below you might see skiers moving down the slopes. Or, you might see a glacier glistening in the sunlight.

Switzerland has many rivers, but most are not good for boats. Many are too fast-moving and have waterfalls on them. However, there is one important river passing through Switzerland that can be used by boats. This is the Rhine River. The Swiss use the Rhine River to reach the ocean. Swiss goods are put on flat-bottom boats called barges. The barges sail northward to ports located on the North Sea. From here Swiss products can be sent to all parts of the world on ocean freighters.

2

A Puzzle



Mountain passes are usually given names. This picture gives you a clue to the name of one pass in the Alps. What is it?

Draw a puzzle picture for these mountain passes in Canada.

- **Kicking Horse Pass (British Columbia/Alberta)**
- **Pine Pass (British Columbia)**
- **Crowsnest Pass (British Columbia/Alberta)**

Make a Model

Make a model of a scene in the Alps. Paint a mountain scene to go behind the model. Include a cable car, a glacier, skiers, roads with sharp turns and a tunnel through the mountains.
Use PAPIER MÂCHÉ, CLAY,
or PLASTER OF PARIS for your model.
You may bring in TOY TRAINS, BUSES, TREES, and BRIDGES for your display.

Weather in the Alps

Look back through this unit. Copy down any sentences that tell you something about the weather in the Alps. Sort the sentences into two groups and put them on a chart. Label one column Good Weather Features and the other column Bad Weather Features.

Interesting Facts About Switzerland

The Alphorn

Look at the picture of the Swiss herdsman. He is blowing an alphorn. Alphorns are carved from twisted trunks of spruce trees. They are about 5 metres long. They play only three notes that echo through the mountains. Alphorns can be heard 10 kilometres away. Why do you think the Swiss use alphorns? Ask your teacher to read the story about how the Swiss got the alphorn.

Yodelling

Have you ever heard anyone yodel? People in the Swiss mountains love to yodel. They make a funny sound with their voices. It is a mixture of singing and shouting. Their voices quickly change from low notes to high notes and back again. Swiss herdsmen call to each other by yodelling. It's a mountain way of saying "hello." Swiss parents call their children home from the meadows with yodels.

Heidi

Have you read the story of Heidi? Children around the world say it is one of their favourite books. Heidi is a little girl who grew up in the mountains of Switzerland. The book is the story of her adventures with her uncle, Peter, Clara, and the rest of her friends. The book was written by a Swiss writer named Johanna Spyri. Find her book in the library if you have not already read it. You will certainly enjoy it.

4 THE TUNDRA

Off to the Arctic

Donna could hardly wait to tell her class the news! "Guess what?" she cried. "Our family is moving to the Arctic in January. My Dad has a new job. He's going to be one of the cameramen filming a television special for the CBC. It's going to be all about the life of the Inuit. Dad will have to live on Baffin Island for about six months, and we get to go along too!"

Donna's friends gathered around her asking all sorts of questions. They were almost as excited as Donna. "How soon do you go? Will you have to go to school there? How will you get there? Will you see any Inuit? Where is Baffin Island anyway?"

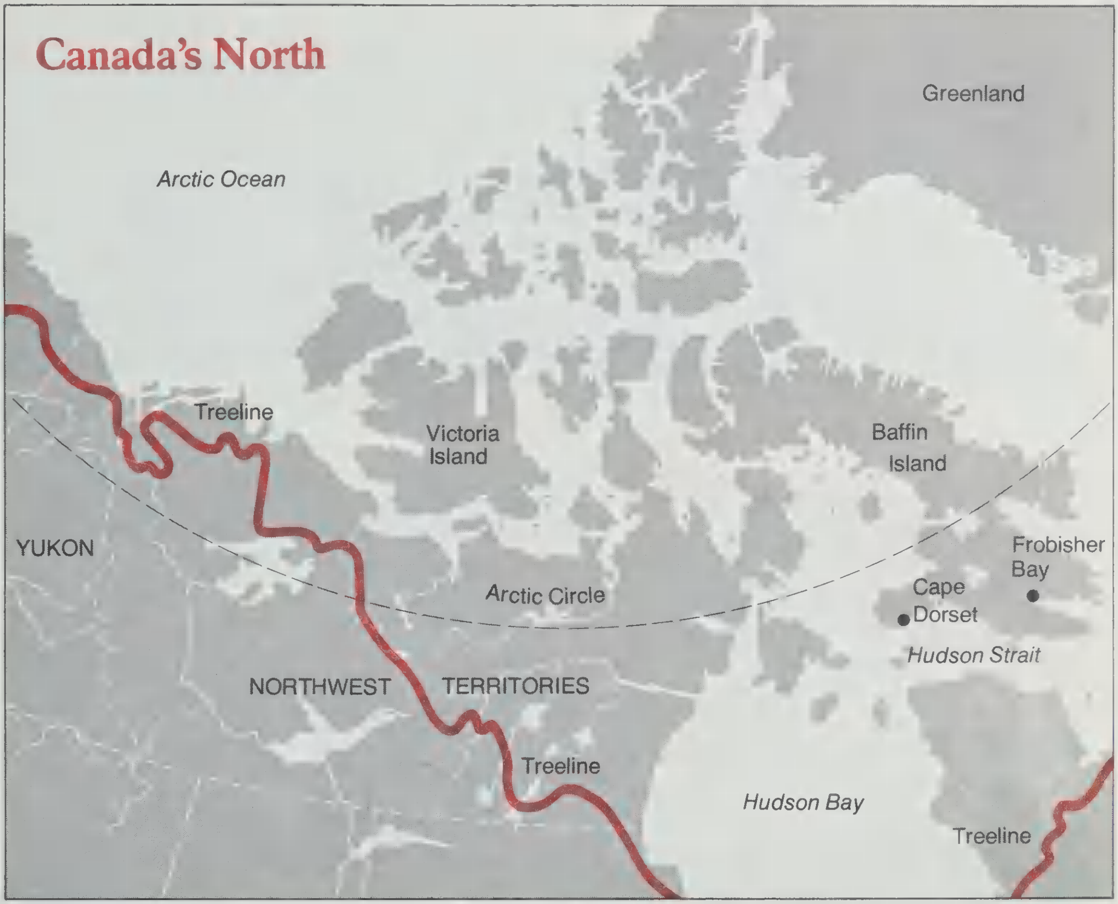
"Hold on a minute," said Mr. Bailey, "just one question at a time for Donna. Let's get out our atlases and see where Donna and her family are moving."

"Do you know where on Baffin Island your family will be living?" asked Mr. Bailey.

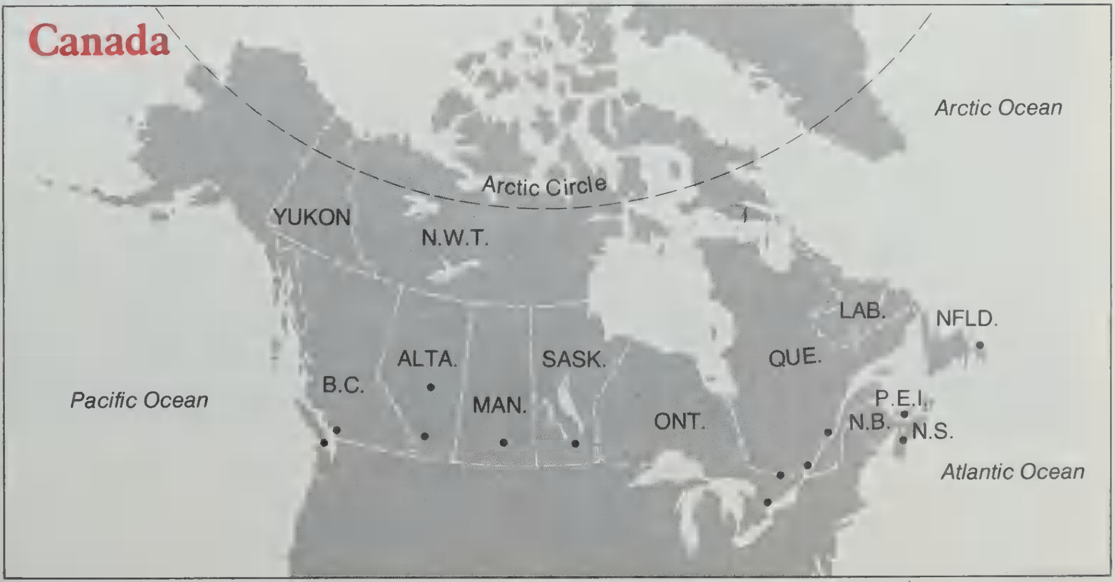
"Yes," exclaimed Donna. "Frobisher Bay will be our home. Though Dad and the film crew will have to visit many of the smaller villages on Baffin Island, the rest of our family will live in a rented house or an apartment right in Frobisher Bay."

Map of Canada's Arctic

Locate the Arctic Circle. The Arctic Circle is a handy line on maps to mark off the northern part of the globe, just as the Equator marks the middle. Run your finger across the Arctic Circle until you hit Baffin Island. Locate the town of Frobisher Bay. It is located south of the Arctic Circle in the southern part of Baffin Island. In which province or territory of Canada is Frobisher Bay found?



Canada's North



Canada

Weather Report from Frobisher Bay!

Donna's class wanted to know what the weather would be like in Frobisher Bay. Mr. Bailey brought out the weather chart. Here is the information he gave the class.

Average monthly temperatures (°C)

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
−26	−25	−22	−14	−3	4	8	7	2	−5	−12	−20

Questions:

1. **Compare the temperatures in Frobisher Bay with the temperatures where you live.**
2. **How many seasons are there where you live? How long are they?**
3. **When does snow come where you live?**
4. **When does snow melt and spring come where you live?**
5. **Tell Donna what clothes she should pack for Frobisher Bay.**
6. **Make a bar graph for the temperatures of Frobisher Bay. It should look like the temperature graph for Manaus on page 63 in the section on the rainforest.**

The Arctic Seasons

Ice and snow cover the Arctic for most of the year. Winter is long and cold. It lasts from October to May. However, for a few weeks each summer the snow melts. Then flowers cover the ground and spread colour in all directions.

In winter the land is frozen and still.

In summer the land is alive with plants, birds, and animals.

In summer the Arctic looks like a giant rock garden.

The tundra is a treeless plain. As you travel farther north towards the North Pole, it gets colder and colder. The trees get smaller and smaller. Finally you reach a point where it is too cold for trees to grow at all. This is the treeline. Everything north of the treeline is tundra. The treeline is the true boundary of the Arctic. Notice on the map that the tundra stretches right across the top of Canada.

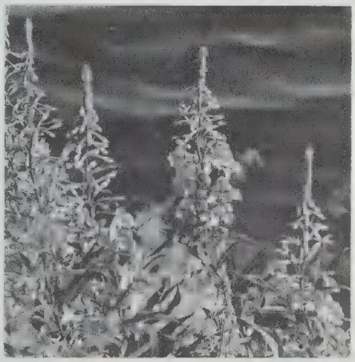
Most Arctic flowers grow in clumps to keep in the heat. They grow close to the ground to stay out of the cold winter winds.

Lichens are simple plants that grow on the rocks. They may be grey, black, yellow, orange, or cream-coloured. Lichens need little moisture or soil to grow.

Lichens grow in the Arctic.

Questions:

1. **What difficulties would plants have in growing in the tundra?**
2. **Why do Arctic plants grow close to the ground?**
3. **Why don't trees grow in the far north of Canada?**
4. **Is Frobisher Bay north or south of the treeline?**
5. **Some northerners are trying to grow vegetables in the Arctic. Do some research to find out how a greenhouse works. What special problems of the Arctic would a greenhouse overcome?**



One Arctic flower is Fireweed.

The Inuit

The Arctic tundra is the land of the Inuit. The word "Inuit" means "the people."

The Inuit have learned to live in the cold and the ice of the Arctic. The Inuit came to Canada from Asia about 3000 years ago. They spread out all across the Arctic. All Inuit speak the same language and have many of the same customs.

The day before Donna left, Mr. Bailey's class had a party for her. She said goodbye to all her friends, but promised to write to them soon. The class waited anxiously for Donna's first letter from Frobisher Bay.

Frobisher Bay
Northwest Territories
15 January

Dear Mr. Bailey and Class:

Hi everyone! Happy New Year from Frobisher Bay. Our family has been in our new home for two weeks. We are living in an apartment building. My bedroom looks out on the town but it is hard to see anything. Would you believe it is dark almost twenty-four hours every day? Mom tells me not to worry because in the summer it will be light for almost twenty-four hours every day!

I have already started at my new school. Here we study the same subjects we were studying in Mr. Bailey's class. Reading, arithmetic, spelling, language, writing, social studies, art, music, and science. People are nice and I've made friends with some of the kids in my class. We have some Inuit kids in my class and I am getting to know them. My teacher's name is Mrs. McGregor and she is very nice.

I miss all of you. Please write soon.

Your friend,
Donna

The Land of the Midnight Sun

How Long Is It?

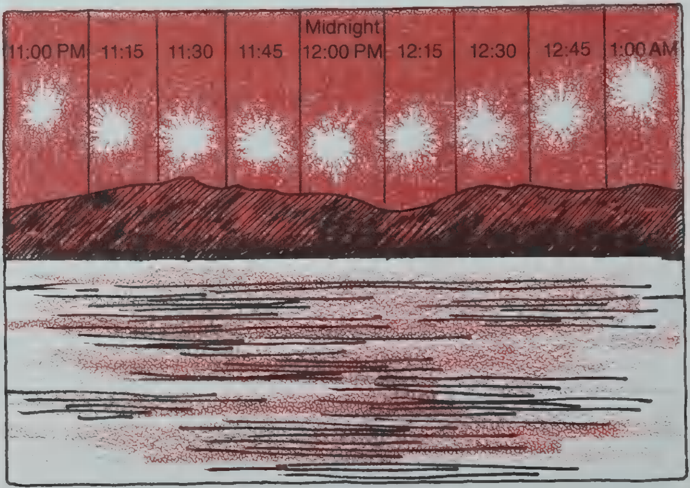
A Day
It takes the earth one day to turn around completely on its axis.

A Year
It takes the earth one year to make one complete trip around the sun.

Try to find out how the time for a month was established.

The Arctic is often called the Land of the Midnight Sun. In summer, at times the sun shines all day and all night. It never gets dark. Children can play outside in the sunshine all night long! When fall comes, it gets dark at night.

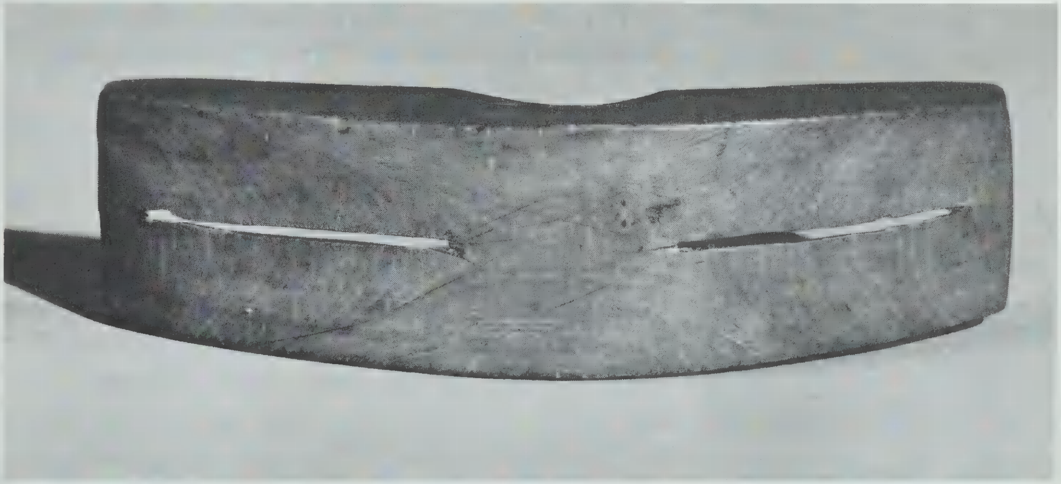
In winter, it is just the opposite of the summer. At times it is dark all night and all day. Now when children go out for recess in the morning it is dark. In spring it gets light in the day. The sun stays in the sky a little longer every day, until once more it is summer. Then there is sunshine twenty-four hours a day in the Land of the Midnight Sun.



Perhaps you have seen the Northern Lights. These are lights that sparkle in the night sky. They look like streamers of yellow, green, and red. They hang like a curtain in the sky. Scientists call these mysterious lights the aurora borealis. The aurora borealis is seen very clearly in the Arctic. On dark nights it often brightens the sky. When the aurora borealis occurs, the Inuit say the spirits of the dead are playing ball with seal skulls.

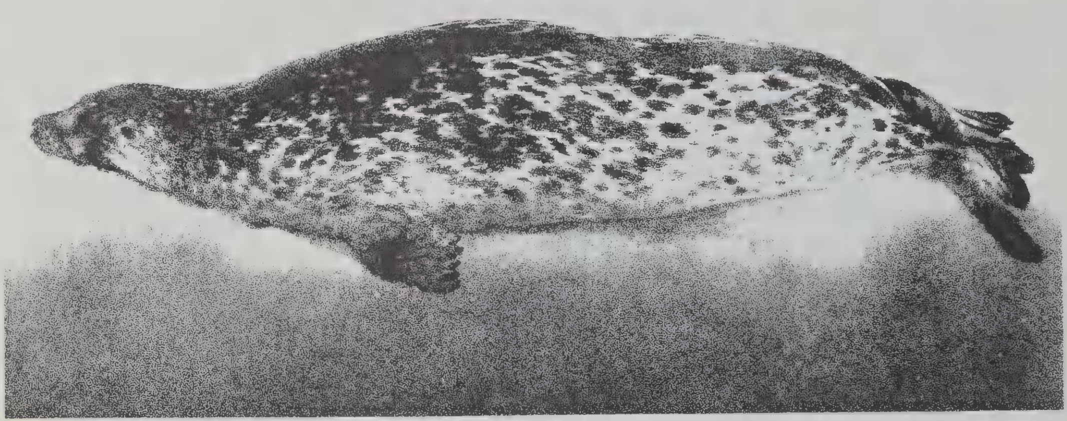
Questions:

1. Imagine you live in the Land of the Midnight Sun. In winter it is dark for almost twenty-four hours each day. The only sources of light are the moon and stars, the aurora borealis, and the reflection of light off the snow. What problems would you have in winter?
2. What problems would you have in summer when it is light for most of the time?
3. Look back at the temperatures in Frobisher Bay. Would you prefer to visit the town in summer or in winter? Why? What clothes would you take with you for each season?



4. Snowblindness: A Picture Study
   What is snowblindness? Look at the picture. The article can be made of flat strips of wood, bone, or antler. How do you think the Inuit used this article to avoid snowblindness? What do you think the Inuit use today to avoid snowblindness?
5. How did the Inuit decide when it was time for their children to go to bed?

Food and Hunting


Seal

Walrus

Long Ago

Most of the Inuit lived by the sea. The sea provided much of their food.

In winter the water turns to ice on top. Seals were hunted through a hole in the ice. Seals must breathe air. They keep holes in the ice open. They come from under the ice to breathe through the holes. The seal hunter would set out with his dogsled. He searched until he found one of these breathing holes. Then he tied a bird's feather to a thread. He dropped this into the hole. When the little feather moved, it told the hunter the seal had arrived. Then he killed it with his harpoon. This is a spear with a rope attached to it.

Hunting seals in this way took a great deal of patience. Often the hunter had to wait for many hours for the seal to appear at the breathing hole.

In the early summer the seals were hunted in a different way. When the sun begins to shine, seals like to lie on the ice in the sunshine. The hunter would see a seal sunning on the ice, crouch low, and run towards it. If the seal put its head up to look for danger, the hunter froze. The hunter had to come close enough to the seal to reach it with a harpoon. The hunter killed the seal with the harpoon. Then he quickly set to work to skin the seal with his very sharp knife.

One person by himself could hunt seals. But people had to hunt larger sea animals, such as whales and walrus, in groups.

The hunters looked for whales in the summer, when the ice had melted. They travelled in boats called umiaks. A umiak is a large boat paddled by several hunters. The Inuit moved towards the whale and harpooned it. Whales were dangerous to hunt because they could overturn the boats with a flip of the tail. The Inuit hunted whales even though it was dangerous, because one whale provided an Inuit village with meat for many weeks.

Other sources of food from the sea were fish such as salmon, Arctic char, and whitefish. The Inuit women and children hung the fish out to dry. Dried fish were saved for winter use.

Summer was the busiest time for hunting. In the summer the Inuit travelled inland to hunt for caribou. These animals moved north in vast herds in the warmer months. Caribou provided an important source of meat for the winter. The Inuit stored the frozen meat on racks above the ground so the dogs could not get it. The frozen meat could later be boiled when needed.

Birds and rabbits were also shot with bows and arrows and eaten.

Probably the most dangerous animal that was hunted was the polar bear. It was prized for its meat and beautiful fur. The Inuit hunter used dogs to help in the hunt. The dogs chased and cornered the polar bear. Then the hunter moved in for the kill. Many Inuit hunters and dogs were killed or injured while hunting polar bears. To kill this animal was the mark of a very skilled and brave Inuit hunter.

Caribou

Polar Bear

The Family

The Inuit family was like your family, but it was larger. Parents, children, grandparents, aunts, uncles, and cousins usually lived together. They were one big happy family. Families were very important to the Inuit. They thought it was good to have as many relatives as possible. A person could always count on relatives for help.

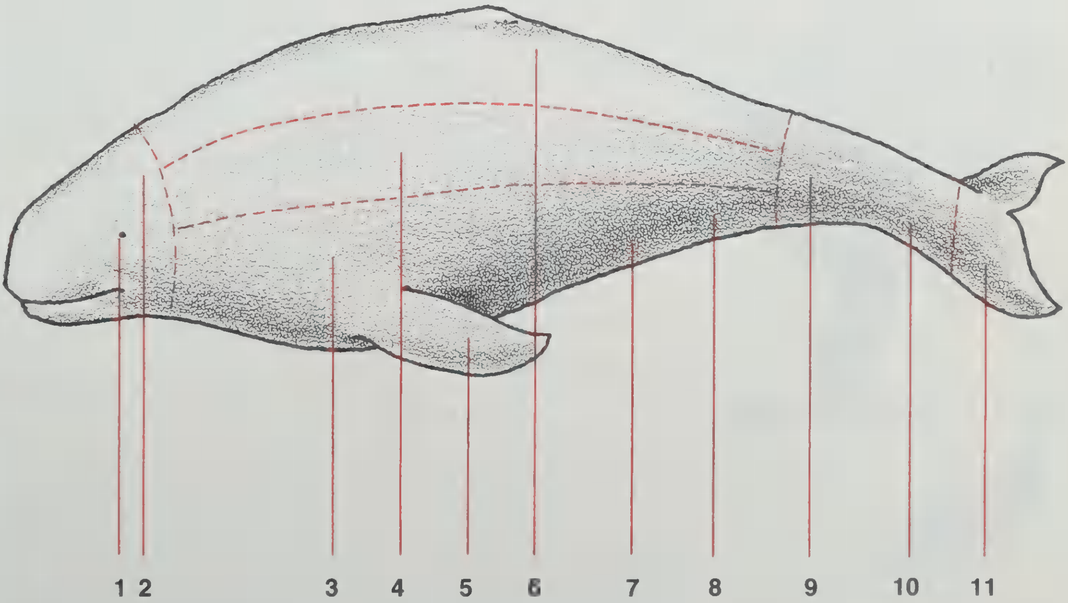
The Inuit lived together in small groups of related people. The leader of the group was usually the wisest man or the best hunter, but the whole family helped to make all important decisions. The whole family also helped to hunt for food.

The Inuit Idea of Sharing

Inuit hunters did not keep everything they caught for themselves. The animals were divided among all the people in the village. The sharing of an animal was done by very definite rules. Every part of the animal was given to a certain group of people. This way everyone in the village had food to eat. Even the old people and the less skilled hunters had a share of any animals that were killed. The hunter's dogs were also rewarded with certain parts.

This picture shows how the parts of a whale were ▶ divided up.

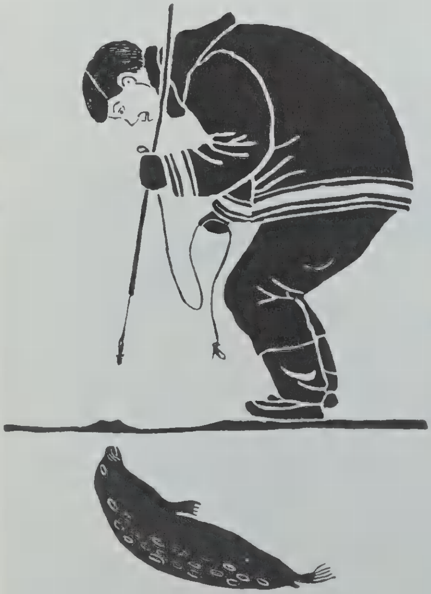
Parts of the whale:	How the parts are divided up:
1. Eyes	1. Dogs
2. Head	2. Men
3. Heart	3. Men
4. Ribs and trunk	4. Everyone in the settlement
5. Flippers	5. Everyone
6. Blubber from upper parts	6. Hunter's household
7. Interior parts	7. Dogs of the hunters who killed it
8. Blubber (whale fat) from lower parts	8. Women
9. Back section	9. Women
10. Blubber from rear section	10. Hunter who killed it
11. Tail	11. Everyone



Something to Think and Talk About

1. What did the Inuit hunter do with everything he caught?
2. Why was sharing food so important to the Inuit?
3. Pretend you are an Inuit person too old to hunt. How would the custom of sharing help you?
4. Why were the hunter's dogs given certain parts of the animal?
5. What does this practice of sharing tell you about Inuit people?
6. Why do you think the Inuit thought it was a good thing to have as many relatives as possible?
7. Think of ways in which people share in your community.

Learning from a Picture



1. What is the Inuit hunting?
2. What weapon is he using? How would he use this weapon?
3. Where is the breathing hole? Why does the animal come to the breathing hole?
4. What do you think the hunter will do with the animal after he has killed it?
5. Why would hunting this way take a great deal of patience?

Today

Many Inuit still earn a living by hunting and trapping animals. They sell the furs to the Hudson's Bay Company. The furs are made into coats and hats.

Today many Inuit still hunt animals for meat. However, they do buy most of their other food supplies from stores, just as most other Canadian families do.

Today the hunters often use a rifle to shoot the seals on the ice. They still use umiaks, but now the boats have outboard motors.

Things to Talk About

1. **Why would a rifle be better than a harpoon for hunting seals on the ice?**
2. **When would a harpoon be more useful than a rifle for hunting seals?**
3. **What goods would the Inuit buy at the Hudson's Bay Company store?**
4. **How have the rifle and Hudson's Bay Company store changed the lives of the Inuit? Have these changes made life better or worse for the Inuit? Why?**

Frobisher Bay
Northwest Territories
2 March

Dear Mr. Bailey and Class

Hi everyone! I am having lots of fun but I miss my home and my friends.

Mom and I have just come from shopping at the Hudson's Bay store. Guess how we got there? We went by snowmobile. Almost everyone here has one and they are much better for getting around the town than cars.

Some Inuit still use sleds pulled by dog teams to get around. But many of them also own snowmobiles. It takes alot af dogs to pull a sled. They are a special breed of strong dogs that look like wolves. My friend has one and its name is Stormy. Stormy has a wiry coat with thick, soft underfur to keep him warm in the cold winters. His feet are wide and flat to help him travel through deep snow. Boy, is he strong! You should see him pull a sled in a dog race. He weighs over 60 kilograms. These big dogs are perfect for this northern climate.

Thankyou for your letter about what has been happening at home since I left.

Your friend
Donna

Transportation

Long Ago

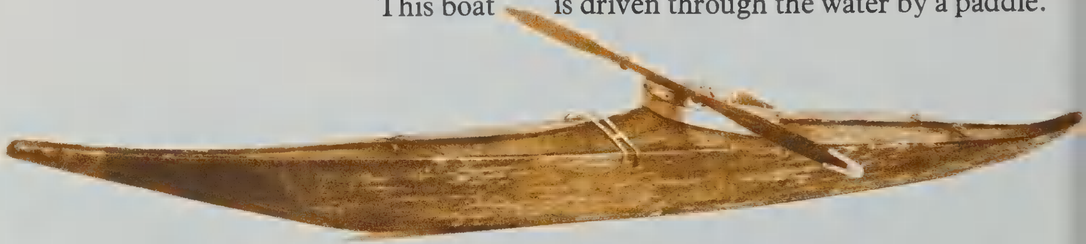
In the early days the Inuit travelled on land in winter by dogsled. They made the frame of the dogsled from whalebone or driftwood. The Inuit laced the frame together with strips of animal skin. They coated the runners of the sled with water. The water froze quickly and then the sled would slide easily over the ice. The driver stood at the back to guide the sled. Five to twelve dogs pulled the sled at the front. The lead dog learned to obey the voice commands of the driver. The lead dog would start, turn left or right, or stop with just one word from the driver. The other dogs in the team learned to obey the lead dog. The Inuit developed these strong dogs for working and hunting. They could pull sleds loaded with hundreds of kilograms of supplies.

In the summer, when the ice had melted so that they could use boats, and Inuit travelled along the coast in a kayak.

The kayak is one of the Inuit's gifts to the world.

It is long, narrow, and low, and carries one person. A kayak is completely closed in except for a hole where the person sits.

This boat is driven through the water by a paddle.



A kayak was made this way. The Inuit women first scraped all the hair from animal skins. The seal and caribou skins were stretched over a frame. The frame was made of driftwood. The boat was so light a person could carry it on the head without much effort.

The paddler slid into the opening and stretched his legs beneath the deck. Weapons were fastened to the deck, with the harpoon always within easy reach.

A kayak must be strong. If it turns over in the water, the Inuit has a trick to keep the boat from sinking. He does a "kayak roll".

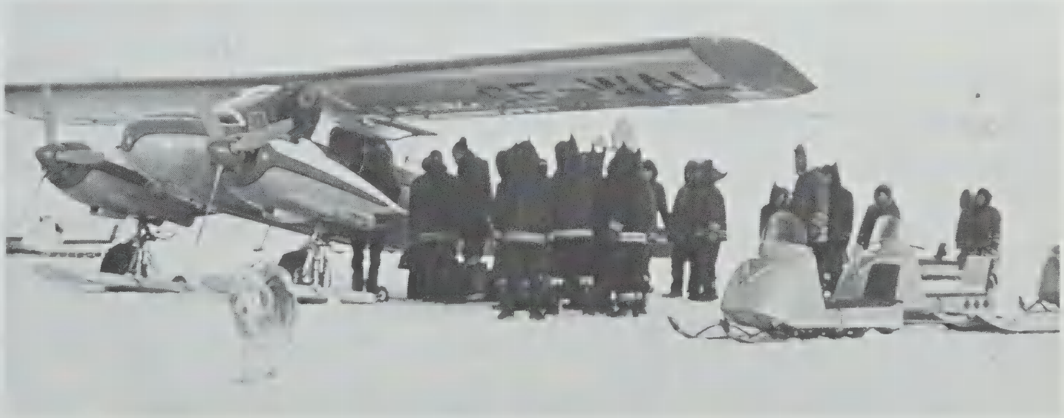
He uses his paddle to flip the kayak back to the upright position. It takes a lot of skill and strength to do this successfully. Today some Inuit wear waterproof parkas in kayaks. The parkas fit over the openings in kayaks so the water cannot get in.

Today

In southern Canada most people use cars for going places. But throughout the Arctic there are few roads. Therefore snowmobiles and dogsleds are best for travelling in the winter. Snowmobiles can go anywhere on the flat, treeless tundra. Unlike the dogs, snowmobiles do not have to be fed when they are not in use.

Airplanes now move most of the people and goods in the north. Most communities have a small airport. During the cold winter months large airplanes can land safely on the thick ice.

It is expensive to move heavy things by plane. It is cheaper to bring goods in by ship. When the ice along the coast melts for a short time in the summer, large cargo ships go to the Arctic communities. They bring building materials, fuel, household goods, snowmobiles, clothing, and food supplies. Storekeepers in Arctic villages try to get as many of their supplies as possible by ship in the summer. Otherwise, the goods in the stores would be too expensive for most people to buy.



Learning from Pictures

1. **Name three forms of transportation shown in these pictures.**
2. **Look carefully at the picture of the airplane. What features of this plane make it suitable for travelling in the Arctic?**
3. **How would this plane be changed for landing in the summer season?**

Dogs or Snowmobiles?

Some people say sleds and dogs are the best way to travel on the Arctic tundra. Other people say snowmobiles are better. Here are some reasons for liking dogsleds, and some for liking snowmobiles. Read the reasons carefully. Sort the reasons into two columns. In Column A put the reasons that prove dog teams and sleds are better. In Column B write the reasons that prove snowmobiles are better.

a) gas and oil are very expensive in the Arctic
b) snowmobiles can travel faster than dogsleds
c) snowmobiles break down
d) a dog can smell the way home in bad weather
e) a dog can keep you warm in a storm
f) snowmobiles may not start in very cold weather
g) dogs sometimes bite
h) snowmobiles make a great deal of noise and pollution
i) a dog team needs several kilograms of meat every day
j) snowmobiles do not need care all year long
k) dogs are specially suited to hard work in a northern climate
l) when people are starving, dogs can be eaten
m) snowmobiles can travel without getting tired

Can you think of any more reasons in favour of using the dog or the snowmobile in Canada's Arctic?

If you were living on the Arctic tundra, would you prefer to own a dog team and sled or a snowmobile? Why?

Frobisher Bay
Northwest Territories

31 March

Dear Mr. Bailey and Class

Hi everyone! I haven't been able to write to you for a few weeks because I got frostbite. I left my mittens at school and my fingers froze as I ran home for lunch. The doctor at the hospital warned me that it is so cold here that in a few minutes fingers and toes can freeze. She said that shoes, socks, and gloves should be worn loosely in cold weather. The doctor said that everyone living in the North should take a lesson from the Inuit and dress warmly.

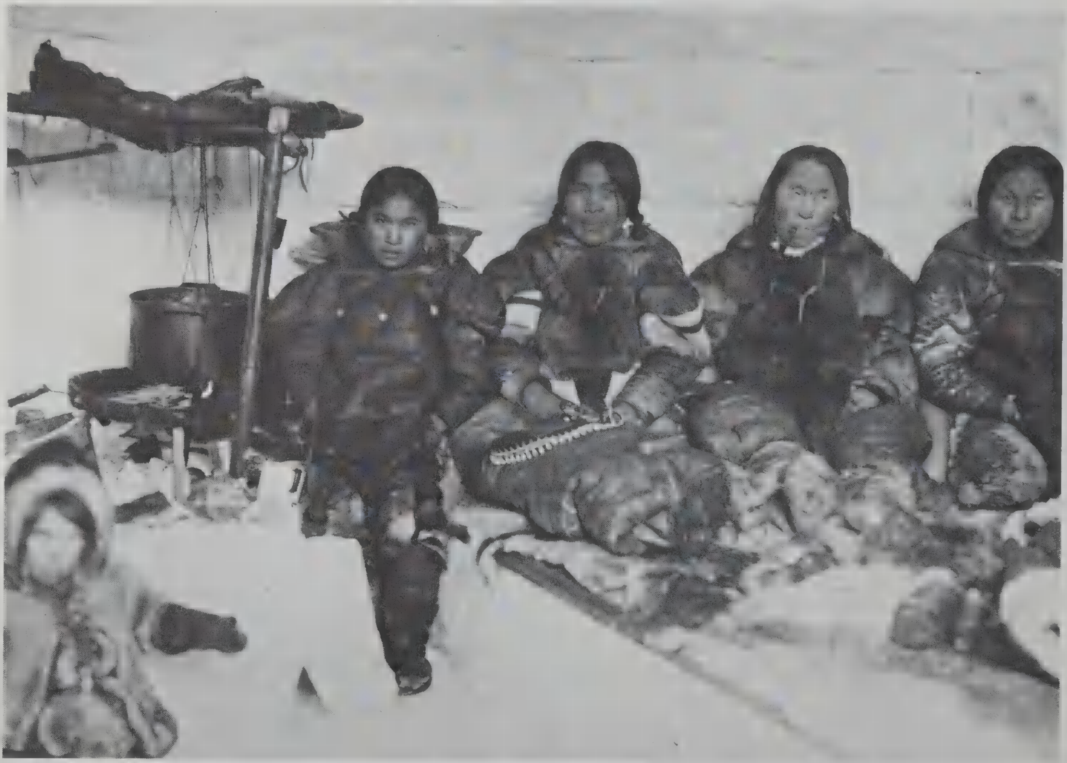
I am sending you some pictures of Frobisher Bay. Don't the houses look funny on stilts! Dad says this is the best way to build in the Arctic because of the permafrost.

Your friend,
Donna

Dressing for the North

Long Ago

The Inuit have learned how to keep warm in their cold climate. In the old days the Inuit had to make all their own clothing from animal skins. The skins were sewn together to make parkas.

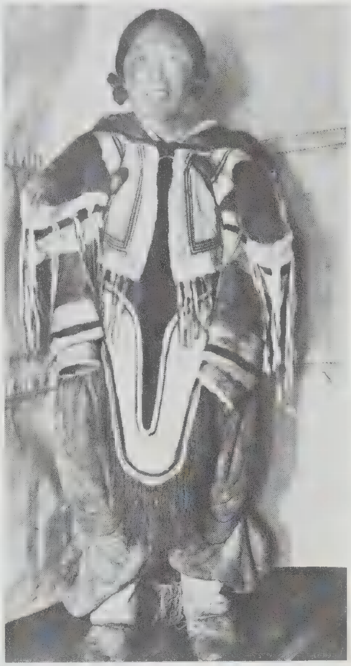


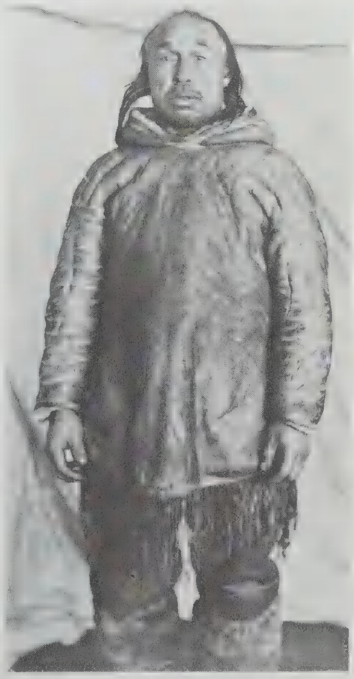
The Inuit wore boots of sealskin called mukluks that reached up their legs as far as their knees. The mukluks were sometimes lined with soft grass and moss for extra warmth. Above the knees they wore trousers of caribou hide or bearskin. Caribou skins were light and warm. It took the skins of seven caribou to clothe one adult Inuit. Over everything the Inuit wore large parkas with the fur facing inside. Under the parka the Inuit wore a light shirt of animal skin. When it was very cold the Inuit wore a second parka with the fur facing out. The hood of the parka was lined with fur. Fur from wolves was best because it shed the snow and water. Also, its long hairs blew over the face of the wearer and stopped the wind. The women's parkas had a huge hood on the back so that they could carry their babies. The babies were always snug and warm. They were dressed in the softest animal skin.

In very cold weather the Inuit tightened their parkas at the neck. This held the warm body air in. Usually the problem with Inuit clothing was to keep them from becoming too hot. If the Inuit sweated too much, the moisture could freeze in their clothes. Then the clothes would become stiff and uncomfortable. When the Inuit became too hot, they loosened their clothing at the neck, letting out the warm air.

Making clothes for an Inuit family took a lot of time and hard work. The women cleaned and scraped the animal hides. Then they chewed them or rubbed them to make them soft. Sinews were saved from the back and legs of the caribou. Sinews are tough cords that hold the muscle to the bone. The sinews were dried, beaten, and cleaned to make thread.

In the cold climate you could freeze to death without warm clothes. Every Inuit woman was expected to be able to sew well. The lives of her family depended on her skill.





Today

You can still see some beautiful fur parkas made in the old way. However, today most Inuit wear ready-made clothes. They buy windproof coats and snowmobile suits from the Hudson's Bay Company stores or order them by mail from department stores in southern Canada.

Igloos–Snow Shelters for the North

Long Ago

In the past the Inuit moved from one hunting area to another searching for animals. They had to have shelters they could put up quickly and easily. The houses had to be strong to stand up against the fierce Arctic winds. There were no trees to make houses, so the Inuit learned to make houses of blocks of snow. These snow houses were called igloos. A good builder could finish one in an hour. The snow houses were round. Frozen snow was sawed into blocks. These blocks were piled on top of each other in a spiral as they went up. Each block weighed about 20 kilograms. The Inuit trimmed them for a snug fit. He used a long knife with a curved blade. The space where the blocks of snow were cut out became the floor of the igloo. Sometimes Inuit put a sheet of ice in the wall to make a window. Inside there was a platform of snow blocks. This platform was covered with blankets of furs and was used for sitting and sleeping.

The houses usually had a long entrance tunnel which stopped cold air from blowing in. To enter an igloo, people had to get down on their hands and knees and crawl in. The entrance tunnel was also used as a storage area. Sometimes smaller rooms were added to store things in.

Heat in the igloo came from a soapstone lamp. It burned seal oil or caribou fat. The lamp gave enough heat to cook with and dry wet clothes, and light to see by. But the lamp did not make the igloo so hot that the snow melted. The bodies of many people in the snow house also helped to keep it warm. Inside the igloo it was so warm you could take your shirt off.

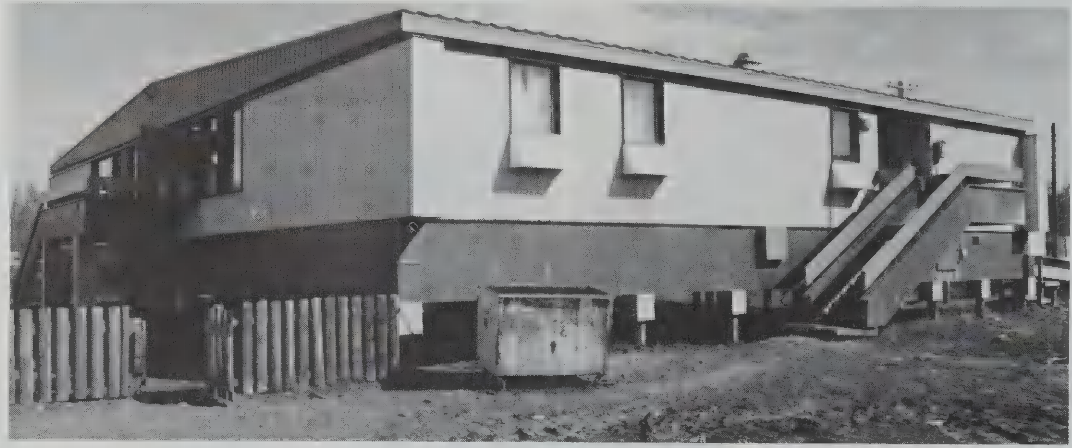
In the summer the Inuit lived in tents made of seal skins stretched over a frame.

Building an Igloo in the Old Way ▶

1. What is this Inuit holding in his right hand? What is he using it for?
2. What do you think he will do about the spaces between the blocks of snow?
3. Why does he pile the blocks in a spiral as they go up?

Today

Today, most Inuit live in houses. The pieces of the houses are built in factories in southern Canada. They are shipped north on supply ships. When they arrive, the pieces are easily put together. These houses are heated by space heaters. They have tables and chairs, beds, a stove, and a water-storage tank.



You Can Do This

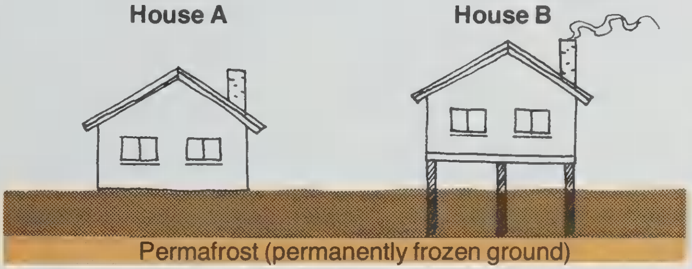
You can make a model of an igloo. Use plasticine to make your blocks of snow. Don't forget the entrance tunnel and something for a window.

Things to Think About

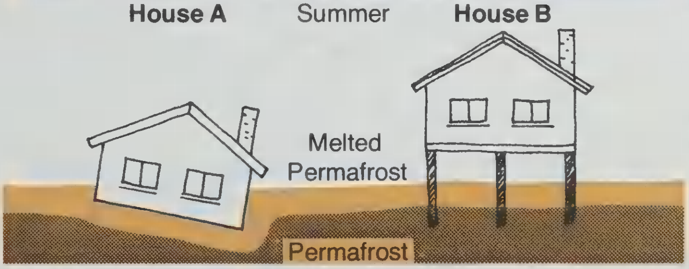
Problems of Permafrost
Permafrost is ground that stays frozen all year. Only the top thaws in the summer and turns into mud. Beneath the mud the soil remains frozen hard as a rock. When winter comes the mud on the top freezes again. As the water in the soil turns to ice it swells. This also happens to water in a tray as it freezes into ice cubes.

Houses cannot be built on permafrost. The warmth of the house causes the top of the soil to melt. The house may then sag into the soft mud. When winter comes and the mud freezes, the swelling ice could push the house over. The ice may push it right off its foundation if it has a basement.

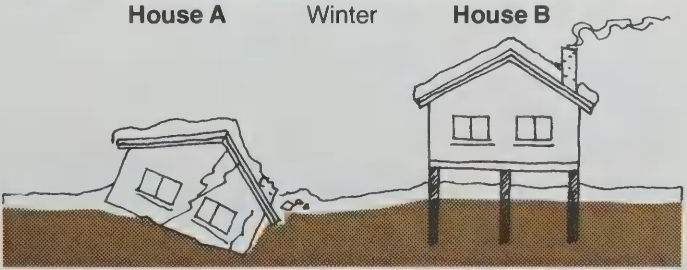
The best way is to put the buildings on stilts. These stilts are logs driven deeply into the permafrost. The warmth of the house does not melt the permafrost. The houses are safe from the dangers of thawing and freezing permafrost.



- How is House A different from House B?



- What happens to the top of the permafrost in summer? Why?
- What happens to House A? Why?
- What happens to House B? Why?



- What happens to the top of the permafrost in winter? Why?
- What happens to House A? Why?
- What happens to House B? Why?
- Why is House B safe in both winter and summer?

Draw a picture of what would happen to a house with a basement in the winter.

Frobisher Bay
Northwest Territories
1 May

Dear Mr. Bailey and Class

It's the first of May and snow is still falling in Frobisher Bay. The days are getting longer. We have just had a carnival to welcome spring. What a lot of fun it was! The carnival was called "Toonik Tyme" and it lasted a week. There were all kinds of contests. One was an igloo-building competition. Another was seal skinning. Our favourite was the snowmobile race.

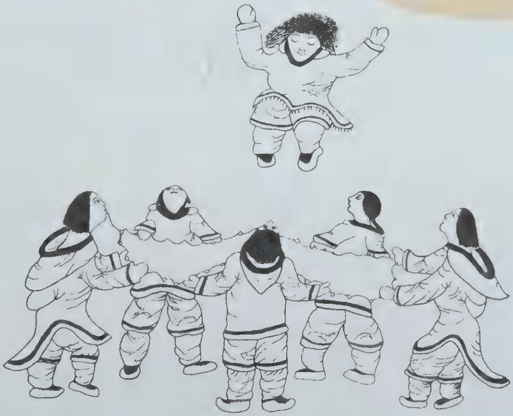
The bannock-making contest drew a big crowd. Bannock is a favourite Inuit food. It is like a flat bread or pancake. People had to run down the field and grab some sticks, and then run back and make a fire. The judges made sure no paper was used. Then the people rushed to get a frying pan, flour, lard, baking powder, salt, and water. When the bannock was cooked on one side, it had to be flipped over in the frying pan. When both sides were done, it was cut into pieces with a stick. The judges tasted each person's bannock before they decided on the winner.

For seal skinning each lady used an ulu to skin the seal. Then she scraped off the flesh. Then she washed and stretched the skin. The winner finished in just over nine minutes.

Crowds gathered to watch the favourite Inuit game - blanket toss. The Inuit call this game naglugatak. It reminded me of a trampoline in the school gym back home. Here's how you play. People hold up a blanket made of walrus skins. The person who is "it" scrambles up on the blanket. He or she tries to stay on her feet while the other players flip the blanket up and down. Sometimes the person flies five metres into the air! When the jumper is bounced off his feet, the next person takes a turn. It's not as easy as it sounds. One of the Inuit girls in my class is the best jumper in Frobisher Bay.

I'll show you some other Inuit games when I get home.

Your friend,
Donna



Learning from a Picture

1. What are the Inuit doing in this picture?
2. What are the people holding? What does it remind you of?
3. What person is "it"? What is she doing?
4. Do you think this game is fun? Why?

Play an Inuit Game

Ptarmigans against Ducks

This game is played by children of the Canadian Arctic. The ptarmigans are those children with winter birthdays (October 1 – March 31). They line up on one side of a line on the ground. The ducks are those children with summer birthdays (April 1 – September 30). They line up on the other side of the line. Each side tugs on a long rope, trying to pull the others over the centre line. If the ducks win, Inuit legend says it will be a mild winter. If the ptarmigans win, the winter will be long and cold.

How do you say "ptarmigans"? Your dictionary will tell you how to say it.

Say it in Inuit

You already know some Inuit words: igloo, kayak, ulu, naglugatak, parka and mukluk.

Here are some others:

English	Inuit	Pronunciation
Hello	Akshunai	Ak-shu-nay
Thank you	Nakorami	Na-ko-ra-mi
Goodbye	Tabowtee	Tah-bow-tee
We are friends	Pikatigikpugut	Pi-ka-ti-gi-pu-gut
They hunt animals	Umajuksiupaktut	U-ma-juk-si-u-pak-tut
Together	Annuraksamiknik	An-nu-rak-sa-mik-nik

With a partner try to make a conversation using as many of these words as possible.

Frobisher Bay
Northwest Territories
2 June

Dear Mr. Bailey and Class:

Mom and I have just returned from a super trip. We flew over to Cape Dorset with Dad and the film crew. Cape Dorset is about 400 km. away from here. A lot of Inuit art is made there.

It's a great place to buy things made by the Inuit.

Inuit people are skilled carvers. They make small carvings of animals. They carve stone, soapstone, ivory, or whalebone. The Inuit do not just pick up a stone and start to carve it. They believe there is a figure in the stone that will be freed when they carve it. They also draw pictures. I saw beautiful carvings of owls, seals, walruses, and polar bears. I bought a carving of a woman carrying a whole fish.

I'll be bringing home some Inuit prints to show you.

Your friend,
Donna

Inuit Carving

The Inuit have always been skilled in making and using tools. For hundreds of years they have carved arrow heads, harpoons, and needles for sewing their clothes. Their tools were made from stone, bone, wood, or ivory. The tools and handles were often decorated with the figures of carved animals.

Today Inuit carvings have become very popular. People around the world like to buy their carvings. Most of the carvings are made of soapstone. Soapstone is a kind of soft rock that is easily shaped. This stone is only found in certain parts of the tundra. Inuit take long trips to find soapstone.

Inuit Printmaking

This kind of picture is called a print. The Inuit started making prints in 1957. This is the story of how they got started.

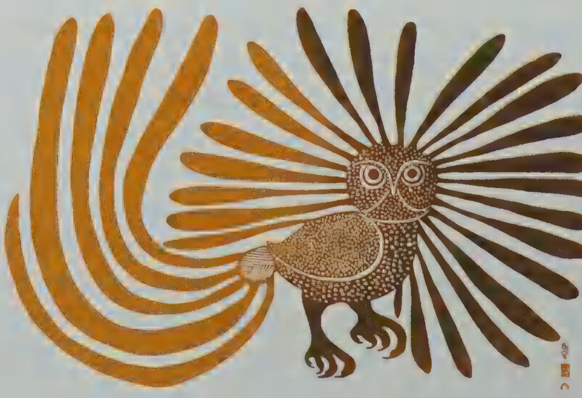
One night two friends sat talking in Cape Dorset. One was Oshaweetok, a famous Inuit carver. The other was an artist from southern Canada, James Houston. Mr. Houston had been helping the Inuit sell their carvings in southern Canada.

Oshaweetok was looking at the pictures on two cigarette packages. He didn't know the pictures were printed. He wondered how you could draw two pictures exactly the same. Oshaweetok said that it must be very hard to do.

James Houston wanted to tell Oshaweetok how this could be done. There were no Inuit words to explain. He decided he could show Oshaweetok. He picked up a walrus tusk that Oshaweetok had just carved. Houston spread black ink on it. Then he took a piece of paper. He laid it on the tusk, and rubbed it lightly and quickly. Carefully he pulled the paper away from the tusk. There for Oshaweetok to see was an exact print of his carving. Oshaweetok was silent for a moment. Then he said, "We could do that!"

That's how printmaking began in the far north. Oshaweetok and others at Cape Dorset began to make prints. They carved their designs on blocks of stone. The areas of the stone that were not part of the design were cut away. This left the design slightly higher than the rest of the stone. Ink was put on the design. Paper was pressed down on the ink. These prints are called stone cuts. Usually fifty copies of the print are made. Then the stone is destroyed.

Below each print is the title, and the artist's name. The names of Cape Dorset carvers and printmakers like Lucy, Peter Pitseolak, and Parr have become well known around the world. One printmaker, Kenojuak, has been awarded the Order of Canada. Her most famous print, "The Enchanted Owl," is shown on a Canadian postage stamp.

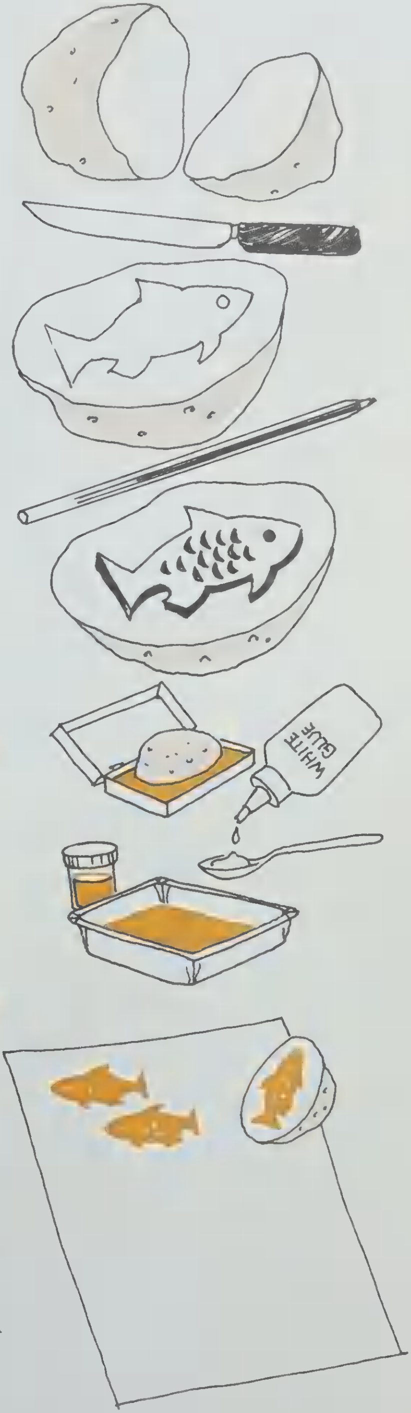


You Can Do This

Try your hand at printmaking

You can make gifts for your friends and family using potato prints. You can make greeting cards, book covers, place mats, and writing paper. Here is how to do it.

1. **Wash, but do not peel, potatoes. Cut them in half.**
2. **Draw a design with a pencil on the cut end.**
3. **With a sharp knife, cut around the design so it stands out about 0.5 cm. Let the potato dry.**
4. **Use construction paper, thin cardboard, paper bags, or newsprint.**
5. **Use an inkpad or mix five spoonfuls of poster paint with one spoonful of white glue.**
6. **Soak the cut surface of the potato with ink. Press it firmly on the paper. Remove the potato carefully so it does not smudge.**
7. **You may use several potato cuts in different colours to make a picture. Allow one colour to dry before using another colour.**
8. **You may wish to sign your print the way the Inuit do. If you use your initials it is called a monogram.**



Make a Soap Carving

Use a bar of soap and your imagination to make an Inuit carving. Write a legend about your soap carving.

Or

Make up a legend about one of the carvings pictured in this book.

Frobisher Bay
Northwest Territories
24 June

Dear Mr. Bailey and Class

Summer is here and so are the mosquitoes. There are more mosquitoes than I have ever seen before. And they are hungry! They're so bad that some people still wear their parkas so the mosquitoes cannot get them. The blackflies are pretty mean too. We call them "bulldogs" because when they bite they hang on like bulldogs.

We like to hike out onto the tundra. We have to wear our rubber boots because the ground is wet and squishy. Tiny Arctic flowers cover the tundra. When we go out we see lots of ptarmigans. When we come close, the mother ptarmigan flutters around pretending to have a broken wing. It is just a trick to get us away from her chicks. Many kinds of ducks have also come back from the south to nest here. In the tundra grass we see hundreds of lemmings. These friendly little fellows are about the size of a hamster. They are food for foxes, falcons, and snowy owls.

This will probably be my last letter from Frobisher Bay. Dad's film is almost finished. I will soon be back at school.

Your friend,

Donna

The Inuit Calendar

In the past the Inuit built their calendars around the seasons. The year was divided into thirteen periods of twenty-eight days each. Notice how closely the Inuit calendar followed what was happening in nature.

1. Kah-pid-rah:	It is cold.
2. Hir-ker-mann:	The sun returns.
3. Ik-ke-ar-par-roon:	The sun is rising.
4. A-von-eve:	The baby seals are born.
5. Neoh-e-a-ler-roon:	The seals take to the water.
6. Kav-ah-roc-vik:	The time the seals shed their coats.
7. Nook-rah-hah-le-yoon:	The baby caribou are born.
8. Mun-cha-le-yoon:	The birds are nesting.
9. Ich-yal-yoon:	The young birds are hatched.
10. Ah-mer-ral-yoon:	The caribou leave.
11. Noo-le-ah-le-yoon:	The time to find a wife.
12. See-koot-se-roon:	The ice is making in the bays.
13. Sik-ker-ne-loon:	The sun disappears.

Make up your own calendar for where you live. Use things that happen in nature instead of the names of the months.

Language

The Inuit language has more than one hundred words to describe different kinds of snow. The general word for snow is *aput*. Soft snow is *mauyak*. Grainy, salt-like snow is *pokaktok*. Drifting snow is *akelorak*. The Inuit have so many words to describe the kinds of snow because it is so important in their lives.

Inuit Stories

In the long and dark winter the Inuit told each other stories. Their favourite stories were legends. Many legends were about the animals they hunted. Other legends were stories about the land, sea, and air. They explained why things in nature looked the way they did.

One legend was about the Arctic mist. Long ago the Inuit believed that they must never cook caribou and seal in the same pot. If they did, the sea and land spirits would become angry.

Anya was a naughty little Inuit girl. One day she dropped a piece of seal meat into the caribou stew when her mother was not looking. People who ate the stew became sick. When they found out what Anya had done, the Inuit chased her across the ice and snow. As she ran, Anya panted. Her breath in the cold air made great patches of mist. The Inuit never did catch Anya. Ever since, when travellers are lost in Arctic fog and mist, the Inuit say it is because of naughty little Anya.

An Inuit girl or boy visiting a city in southern Canada would see many buildings.

What words would you use to describe these buildings?

- a building where many families live
- a building where things are sold
- a very tall building
- a building where one family lives
- a building where hundreds of people work

How many different words do you know for "building"?

What Did Inuit Children Learn?

In the past Inuit children had to learn to do the things their parents did. Often the toys that Inuit children played with were miniatures of tools their parents used for work. Make a list of the things you think Inuit children would have to learn. Give reasons for your suggestions.

Solving the Problems of Living in the Tundra

The Inuit have learned to live in the tundra. Make a chart. In column A list some of the conditions of the tundra. For example, there are snowstorms, there isn't much food, it is hard to grow food, winter temperatures are very cold, and for much of the year the surface of the tundra is frozen. Think of other tundra conditions and add them to your list.

In column B of your chart, tell how the Inuit have learned to live with each tundra condition.

Compare your chart to the one you made on how the nomads solved the problems of desert living.

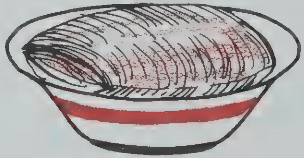
5

THE GRASSLANDS

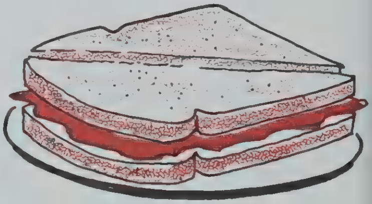
What Plant Do These Foods Come From?

Each of these foods is made from the same plant. What is this plant?

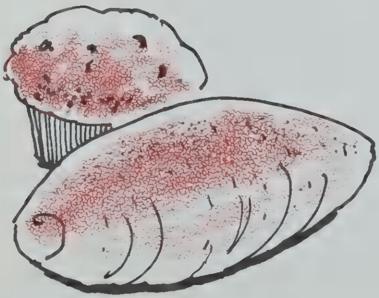
pancakes



Shredded Wheat



bread in sandwiches



rolls

macaroni and spaghetti

Diary of a Wheat-Eater

About one-quarter of the food we eat every day is made from wheat or wheat flour.

Keep a record for three days of everything you eat. List it in a chart under the headings, Breakfast, Lunch, Dinner, and Snacks. Underline in red every food that contains wheat. You may have to read the labels on some foods to find out.

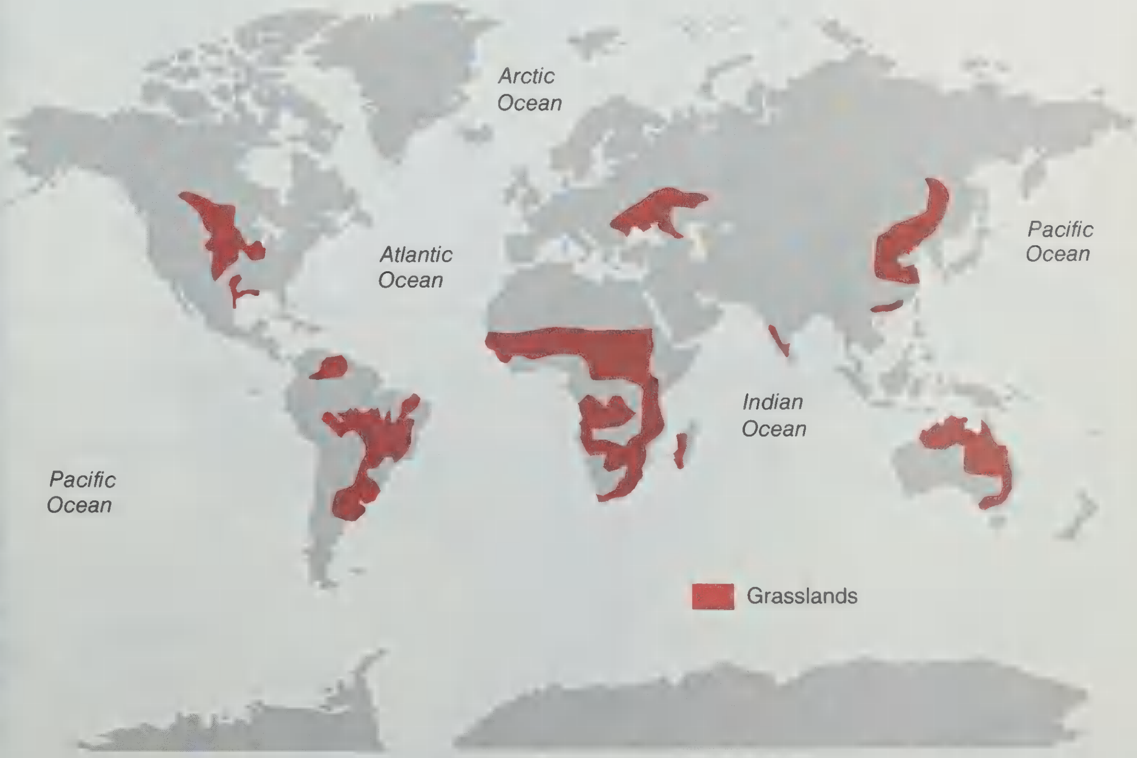
Wheat in the Grasslands

Wheat grows in the grasslands. Grasslands are wide open spaces where few trees grow. Grasslands are found in all parts of the world.

Grasslands provide much of our food. Wheat, rice, corn, and sugar cane are all grasses. They are grasses that are grown for food.

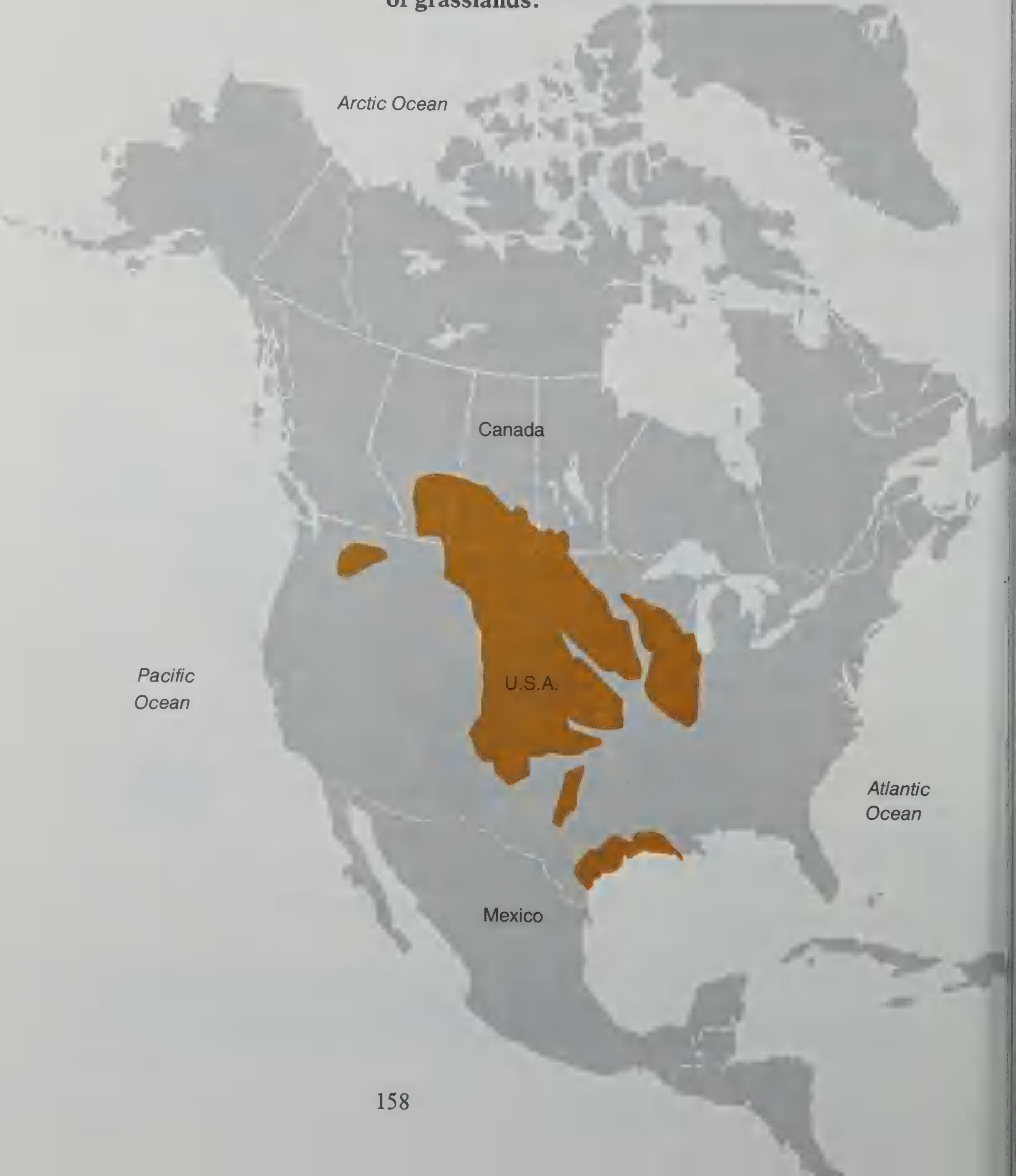
Almost one-quarter of the land in the world is made up of grasslands. The centre of North America is covered by a huge grassland. This grassland is called the prairies or plains.

Grasslands Around the World



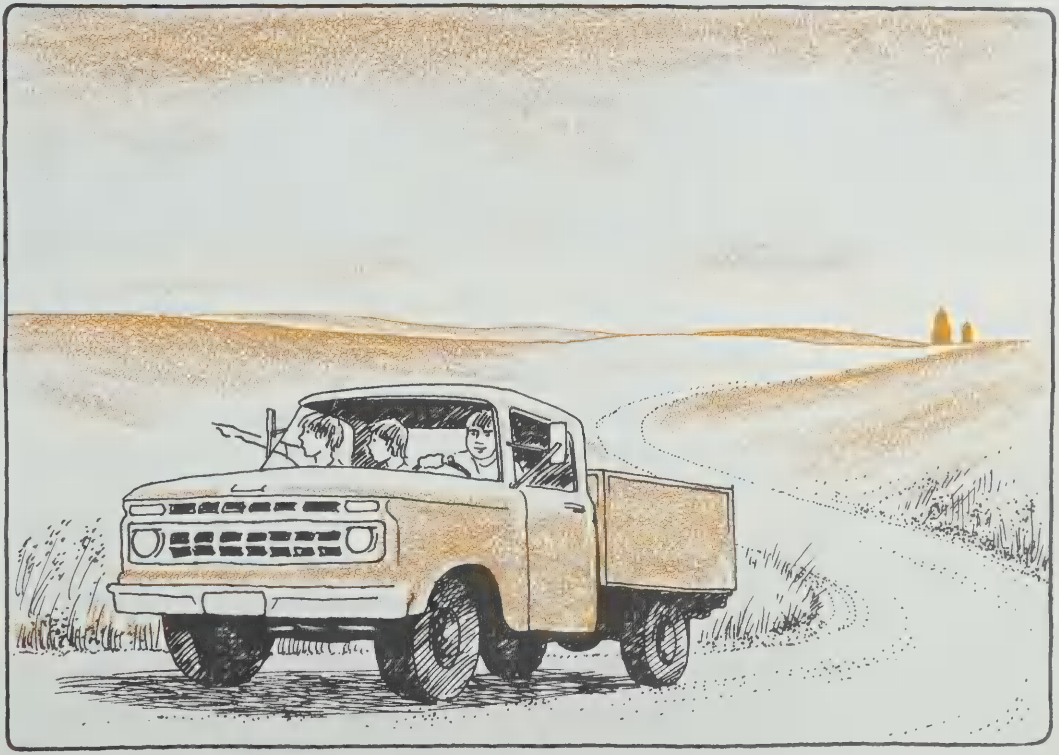
Grasslands in North America

Name the Canadian provinces that contain prairies or grasslands.

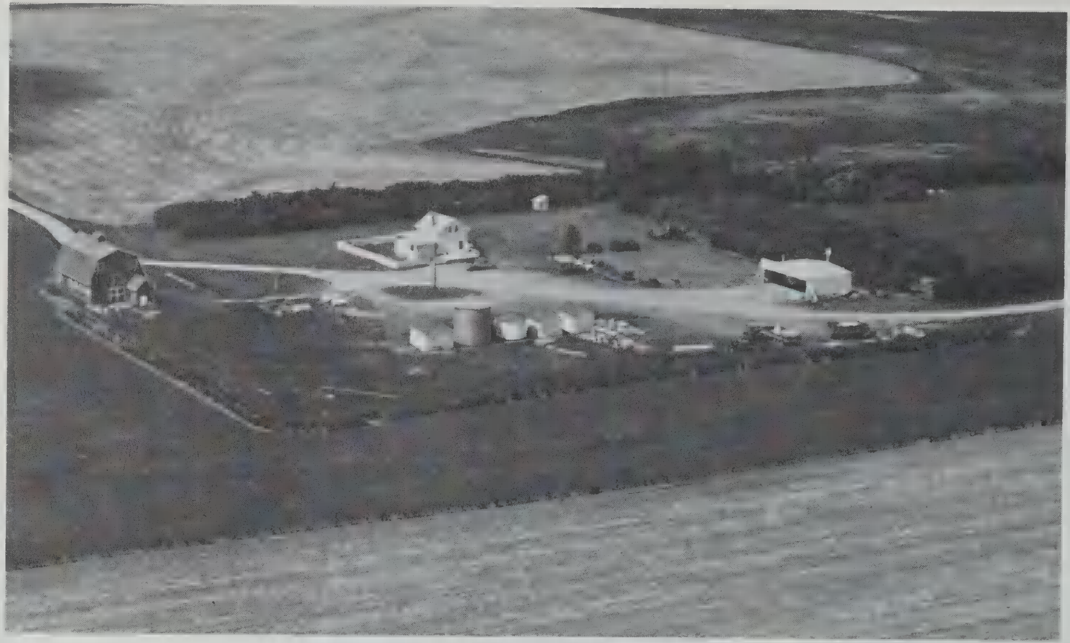


Next Stop, Regina!

Lisa and Barry are happy and excited as the train pulls into the station at Regina, Saskatchewan. It is the twins' first visit to the prairies. They are going to stay with Aunt Joan and Uncle Walter on their grain farm. Cousin Todd is at the station to meet them in the truck. A few minutes later they are whizzing along a road towards the farm.



It is the middle of July. The weather is hot and dry. The farm is eighteen kilometres from the nearest town and about sixty kilometres from the closest city. On both sides of the road, fields of ripe golden wheat wave in the breeze. Every two or three kilometres there are farm houses. There is not much traffic out this way.

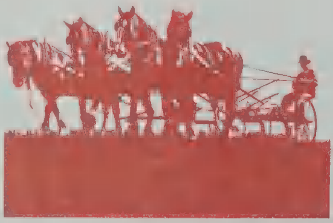


In an hour the twins are sitting in the kitchen. Aunt Joan has placed big pieces of pie and large cold drinks before them. While they enjoy their snack, Uncle Walter tells them about the farm.

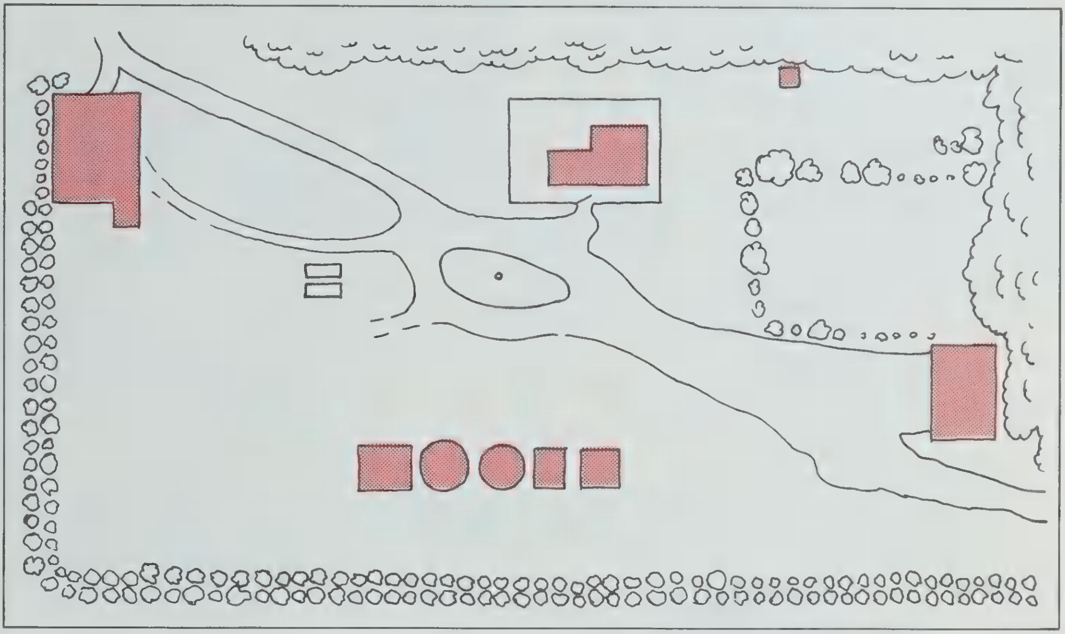
"Most farmers around here are wheat farmers," Uncle Walter says. "We grow a lot of wheat and a little barley and oats. All are grain crops. But you need lots of land to make a living as a grain farmer."

Aunt Joan tells them that the family spends many hours in the nearby town. "That is where we shop and pick up our mail. Your cousin goes to school there on the school bus. In town we have a rink and arena where we curl and play hockey in the winter.

When Lisa and Barry finish their snack, Todd offers to show them around the farm. Aunt Joan says, "Let's start by looking at our garden." Uncle Walter promises to meet them later at the machine sheds.



Close to the house is a huge vegetable garden. The family spends a lot of time working in the garden during the summer. They freeze many of the



vegetables for winter use. Aunt Joan says that she likes to keep the two big freezers in the basement full of vegetables, fruit, meat, bread, and pastries.

"On a farm," she explains with a laugh, "you cannot afford to run out of things. There are no supermarkets close by to pop into. So we try to keep as many supplies here as possible."

Standing in the garden, Todd points out the rows of trees his grandparents planted around the house. Strong winds often blow across the prairies from the west. The trees act as a windbreak. They protect the farmyard from the strong winds, especially in the cold winter.

At the back of the farmyard near the fields are the granaries. Here the grain is stored on the farm until it is sold. Some newer granaries are made of steel. The older ones are small wooden sheds.

Next, the twins move to the machine sheds on the farm. Many machines are necessary to work such a large farm.

Looking at Maps

1. **Study the photo and map of the farm. Point out on the photo and then on the map the house, machine sheds, granaries, driveway, windbreaks, garden, road, fields, and garage. Label a map of the farm with the names of these features.**
2. **Strong winds often blow across the flat prairies in summer and winter. Study the photo of the farm. How are the house and farmyard protected from the wind?**

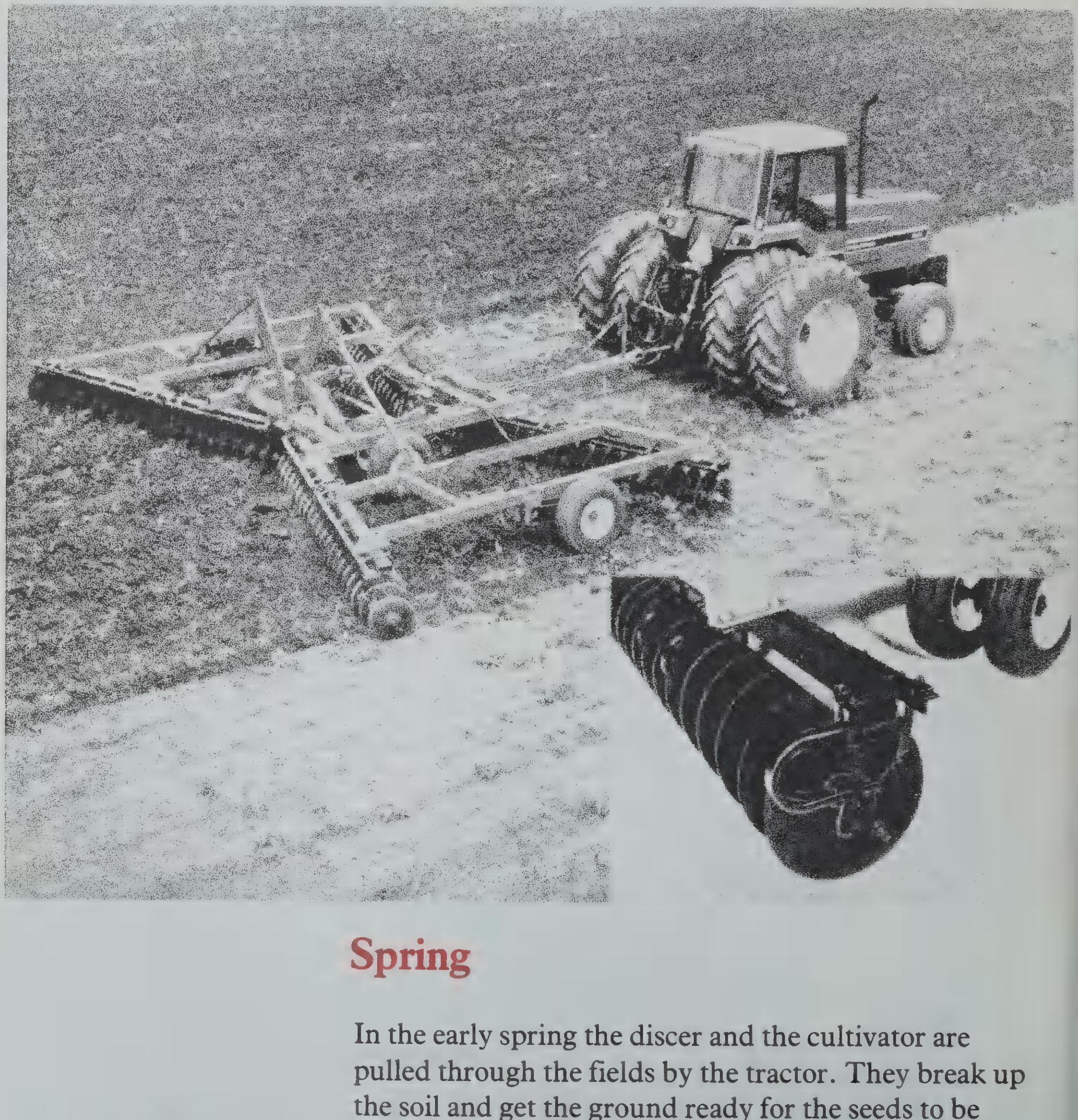
In the shed, Uncle Walter shows the twins the farm's three large tractors. The tractor is a very useful machine. One of the tractors even has an air-conditioned cab with a radio and tape deck to make field work as pleasant as possible. Of course, this is the one Todd likes to drive.

How Did Early Settlers Live on the Prairies?

A settler's first house was often built from pieces of sod. Grass with roots and dirt were cut into blocks. These were piled up to make walls. Even the roof was covered with sod. Sod houses were cool in summer and warm in winter.

Why did the early settlers use grass instead of logs for their first houses?

Why do you think sod houses were good for a first house?



Spring

In the early spring the discer and the cultivator are pulled through the fields by the tractor. They break up the soil and get the ground ready for the seeds to be planted. Then Todd and his Dad use two large seed drills. These machines put the seeds into the ground. Many rows of seeds can be planted at one time.

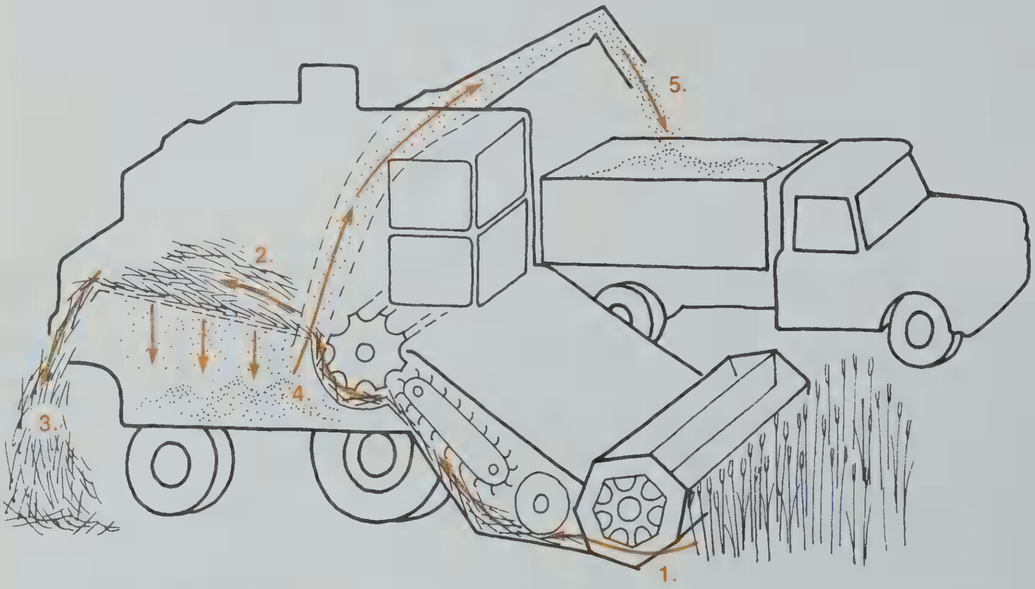
What kind of seeds would Todd and his Dad plant? Why is it important that the seeds be planted at the right time?

Summer

One summer job is spraying the fields with chemicals. These chemicals are poisons that kill weeds, plant diseases, and insects such as grasshoppers.

Some fields are not planted with wheat in the spring. They are left to rest. The farmers must disc and cultivate these fields in the summer to kill the weeds.

Why is the tractor sometimes called the workhorse of the farm? What would the tractor be used for in the winter?



One person can operate a combine.

1. The combine cuts the stalks of wheat.
2. It separates the kernels of grain from the stalks.
3. The stalks are thrown out of the combine.
4. The grain is cleaned. Everything but the grain is screened out.
5. The kernels of grain are loaded into a truck. The truck moves the grain from the combine to the storage granaries on the farm.

Fall

Late summer or fall is the time for harvesting. The whole family works hard to get the crop harvested. When the grain is ripe, it is time to move the combine into the fields. The combine is the largest and most expensive machine on the farm. The combine cuts the grain, separates the wheat seeds from the stems, and loads the wheat into a truck.

Why do you think this machine is called a combine?

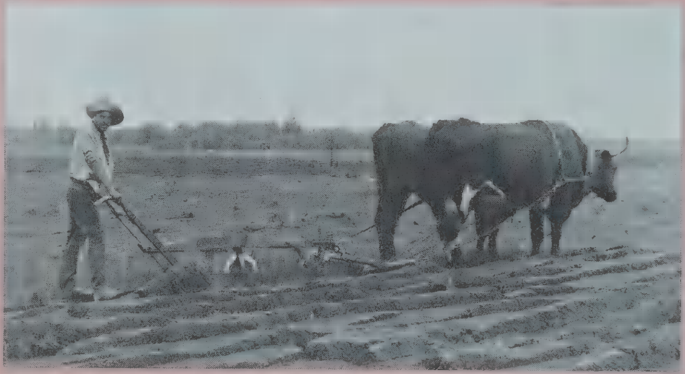
Winter

Uncle Walter mentions that winters are not as busy on a prairie wheat farm. Some days he hauls wheat by truck to be sold in town. He also works on his machinery. It must be repaired and made ready for next season. He makes plans for next spring and orders his seeds. But he and Aunt Joan can relax a bit. They curl two or three times a week. Todd plays hockey. Usually they manage to get away from prairie winters for a two-week vacation.

How Did the Settlers Farm the Prairies?

Farming was hard work for the settlers. Everything had to be done by hand. There were few machines to help them.

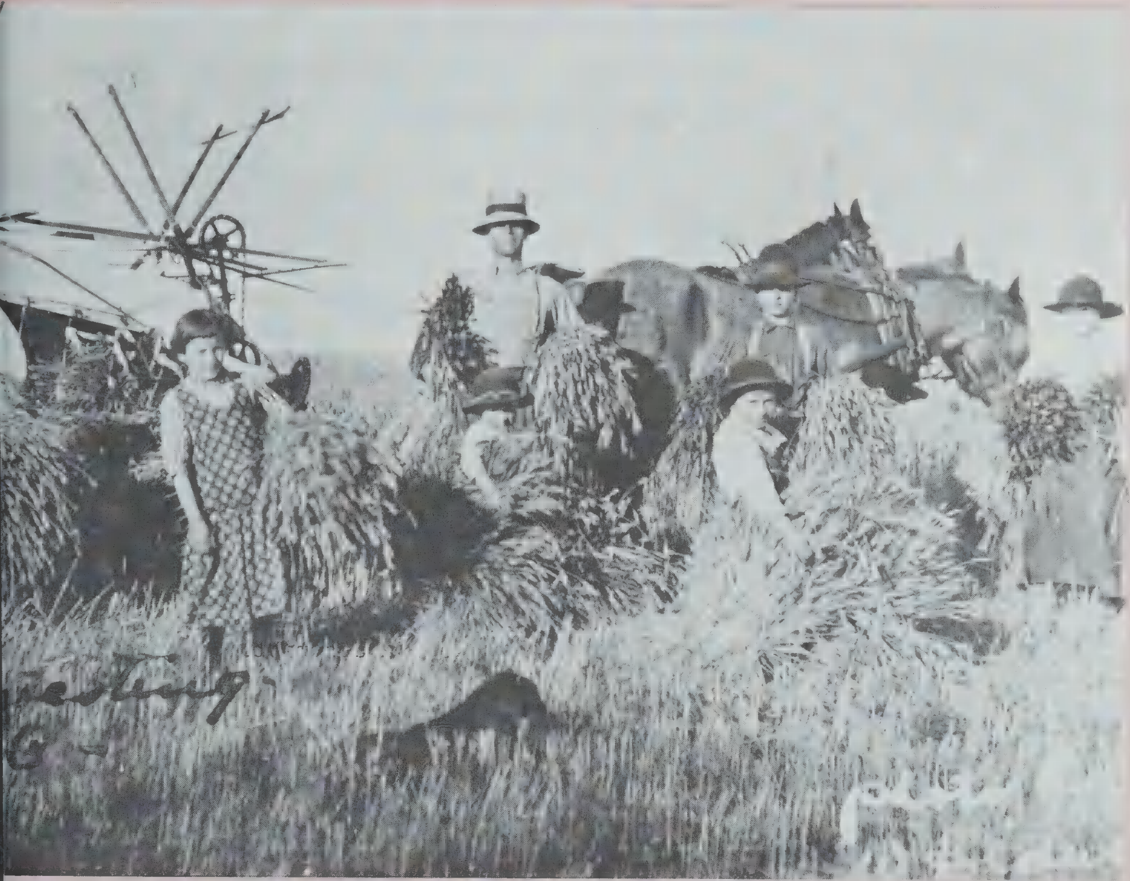
1. **What jobs were done by hand in pioneer days on the farm?**
2. **What animals were used to help with the heavy work? Are these animals still used for farm work?**
3. **What machines were used to help with farming? Are machines today better than the old ones? Why?**



Life on a Wheat Farm

On a large sheet of mural paper, draw pictures to illustrate the work done on a wheat farm in the four seasons of the year.

Compare the work done in the four seasons on a grasslands wheat farm with the work done on a mountain farm in Switzerland.



Dictionary fun.

Use a dictionary to look up the word "mechanized". Do you think this grassland farm is a *mechanized* one? Why?

It has been said that one person, on one combine, in one day can harvest the same amount as 200 people working by hand. In what ways does a *mechanized* farm make the work easier?

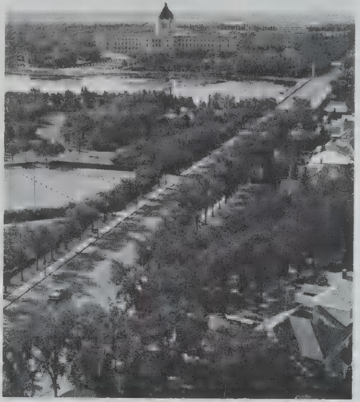
Weather Report No. 1

Summers are usually hot and sunny. Here are summer temperatures for Regina:

	June	July	August	September
Regina	15°C	19°C	18°C	12°C

Now look at the winter temperatures for Regina. Winters are often long and bitterly cold.

	December	January	February	March
Regina	−12°C	−17°C	−15°C	−8°C



1. **Locate Regina on a map.**
2. **Which is the hottest summer month? What is the temperature for this month?**
3. **Which is the coldest winter month? What is the temperature for this month?**
4. **Are these two months the hottest and coldest for the place where you live in Canada?**

Weather Report No. 2

Here are the monthly amounts of precipitation for Regina.

Precipitation in millimetres

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
19	17	21	21	40	83	55	49	34	18	20	17

1. **What is the yearly amount of precipitation in Regina?**

2. Can this amount be considered sparse, light, moderate, heavy, or very heavy? Look on pages 62 and 63 in the Rainforest unit to help you decide.
3. Do you get more or less precipitation each year than the people of Regina?

Weather Report No. 3

Weather problems on the North American grasslands.

1. Temperatures
There are very great differences in temperatures between summer and winter. In summer the temperature may soar past 40°C during the day. In winter cold winds sweep down from the Arctic. Temperatures can fall below −40°C.

2. Drought
A drought is a long period of time without rain. The prairies sometimes suffer from drought. The summer dryness of the prairies is an important reason the land has grass instead of forests. The grass can survive in a drought, but trees may die.

3. Thunderstorms and Hail
Summer rain often comes in thunderstorms. Large amounts of water fall in a short time. Sometimes there is hail too. Hailstones are pieces of ice. They can be as big as marbles. Hail can cover the ground, even on a hot summer day. Hail can ruin a field of wheat. It flattens the plants and knocks the grains off.

4. Blizzards
Storms with high winds and blowing snow pile up huge drifts around buildings. Roads are sometimes blocked for several days with snow.

The Grasslands – Past and Present

Before settlers moved in and started to farm, only wild grasses grew there.

Today most of the grasslands of North America are farms.

Facts About Grass

Wild grass is a very tough plant. It can be

- trampled by animals
- burned by prairie fire
- broken up by machines
- buried under snow.

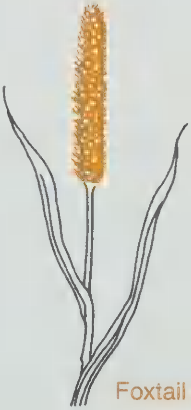
But it still lives!

Grass has hollow stems that bend in the high prairie winds. Grass keeps on growing even if the tops are eaten off by animals. Grass seeds are scattered by the wind. Grass can also spread by putting out new shoots. Grass has long roots that can take in water from a sudden shower. Grass can even live through a long period of drought.

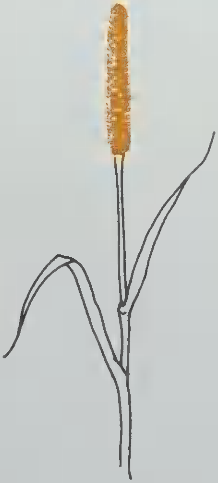
Recall what you have learned about the weather on the grasslands. Why is grass an ideal plant to grow there?

Collect as many different wild grass plants as you can find. Press them and mount them in a display.

Blue grass


Foxtail grass

Wild brome grass


Timothy

Quack grass

Wild rice

Grassland Animals

Many animals make the grasslands their home. They must be able to live in the heat of summer and the cold of winter.

Most animals eat plants and grass. These animals are called *herbivores*, or plant-eaters.

Some hunting animals also live on the grasslands. They are called *carnivores*, or meat-eaters. They hunt and eat other animals.

One of the animals that follows is a carnivore. Which two animals are herbivores?

Coyote

Habitat –no permanent home
–builds den to have babies

Habits –hunts in groups for food in early morning and late afternoon

Food –rabbits, prairie dogs, mice

Size –size of a German Shepherd dog

Weight –9 to 11 kilograms in weight

Travel –walks and runs like a dog (50 kilometres per hour)

Colour –light brown and grey

Voice –long, high-pitched howl

Coyote

1. **Why do coyotes hunt in the early morning and late afternoon?**
2. **What characteristics do coyotes have that make them good hunters?**
3. **How do coyotes help prairie grain farmers?**

Prairie Dog

Habitat – burrows underground in long tunnels

Habits – lives in towns with many hundreds of others

Food – grasses, some insects
– eats in early morning and late afternoon

Size – 35 to 42 cm long

Weight – 0.9 to 1.4 kg in weight

Travel – runs along ground on short legs

Colour – medium brown

Voice – barks to signal danger

Prairie Dog

1. **Why is the underground shelter suitable to prairie dogs in the summer and winter temperatures?**
2. **How can this shelter be used for protection?**
3. **Suggest a reason why this prairie animal is called a dog.**
4. **Why do prairie dogs avoid eating in the hot midday sun?**
5. **What are the advantages of living in towns?**
6. **Prairie dogs have sharp claws and sharp teeth. Why are these necessary?**

Bison

Habitat – roamed over the prairies in the past

Habits – moves in herds all day long

Food – grasses and other plants

Size – 2 metres high, 4 metres long
– 800 kilograms in weight

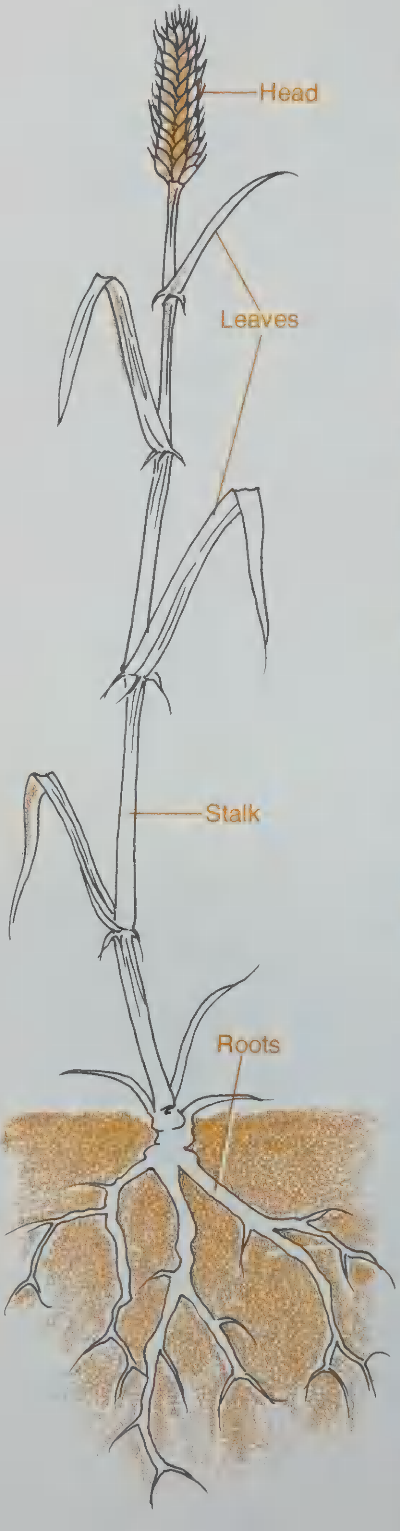
Travel – slow walker, but can run up to 55 kilometres per hour

Colour – dark brown, with a thick shaggy coat of fur

Voice – snorts and grunts

Bison

1. **How do you think bison defend themselves?**
2. **Who are their enemies?**
3. **How are bison suited for the long and cold prairie winters?**
4. **Why are bison not found in the forest?**



Grassland Animal Assignment

Become an expert on a grassland animal. Choose an animal and find out all you can about it. Write up what you have found out in a form that other children would like to read.

Here are some questions to ask yourself before you start your work.

1. **What form will you use (booklet? display?)?**
2. **How will you make your headings and titles easy to read?**
3. **How will you make the pictures interesting and helpful?**
4. **How will you make the story easy to read?**
5. **How will you proofread what you have written?**

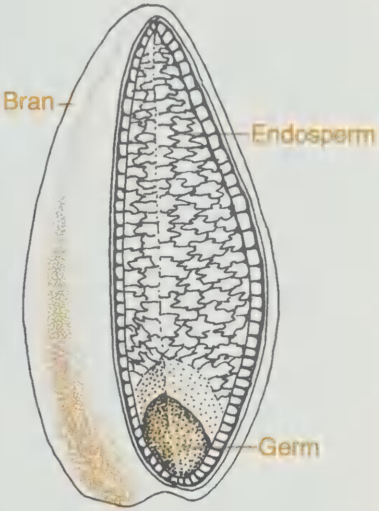
What Wheat Looks Like

When wheat is growing it looks like a carpet of thick green grass.

A single head may contain forty to fifty kernels of wheat. The wheat head turns golden as it ripens.

The roots dig down into the ground looking for water. Scientists measured all the fine roots of a single wheat plant and found they totalled over half a kilometre.

Cut open a kernel of wheat and look at it under a microscope. This is what you would see.



The **endosperm** is the starchy part of the wheat kernel. It is used to make white bread.

The **bran** is the outer covering of the wheat kernel. It is rich in vitamins. It is removed when white flour is made.

The **germ** is the part of the kernel which grows into a new plant. It contains many vitamins.

Why do people add wheat germ to all sorts of food? Whole wheat bread is made from grinding the entire kernel into flour. Why does whole wheat bread contain more vitamins than white bread?

Making Bread

Water is added to wheat flour to make dough. Then yeast is added to the dough. The yeast makes the dough rise or swell up. Then the dough is put into an oven to bake.

Wheat contains a sticky material called gluten. Gluten in wheat flour makes the bread light. Canadian wheat contains a large amount of gluten. Bakers say this is why Canadian wheat makes very good bread.

Be Bakers!

If your school has an oven, you may like to try making some bread. Perhaps the bread will have to be baked at someone's home. However, that way you will miss the smell of fresh bread baking in the oven!

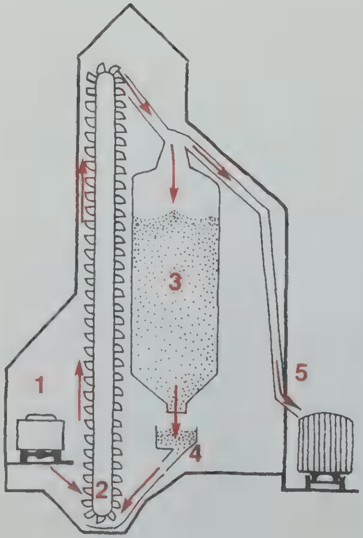
After the Harvest

One morning Lisa and Barry get up very early. Uncle Walter has promised to take them with him into town. He is going to take a truckload of wheat to sell at the grain elevator. This is a chance for the twins to see how a grain elevator works.

Scattered across the prairies are thousands of tall buildings called elevators. Almost every prairie town has one or more elevators next to the railway tracks. At the elevator farmers sell their grain. The grain is stored there until it can be loaded into railway cars for shipment to buyers.

Grain Elevator

1. Unloading Area
2. Moving Belt
3. Storage Bin
4. Scale for Weighing Grain
5. Spout to Load Grain into Boxcars



How Does the Grain Elevator Work?

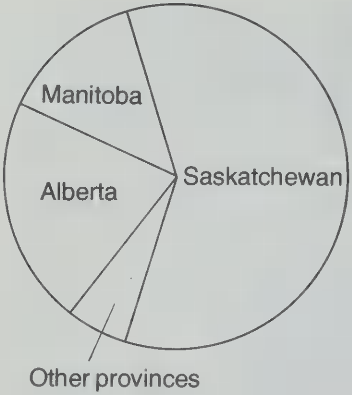
Uncle Walter drives his largest truck to the elevator with a load of grain. The loaded truck is weighed on a huge scale. Then the truck dumps its load of grain into the pit. Once again the truck is weighed. The difference between this weight and the first one is the weight of the load of wheat.

The wheat is lifted to the top of the tower by metal cups fastened to an endless belt. At the top different kinds of grain are directed by a spout into separate bins. Wheat pours into one bin, barley into another. The grain is stored in these bins until it is ready to be moved.

Later, empty boxcars from trains are brought in on a railway track beside the elevator. The bottom of a storage bin is opened. Grain falls into a "hopper". The hopper is the place where the grain is weighed. From the hopper the grain falls into the pit. Once again the grain is picked up by the endless belt. It is sent to the top of the elevator. This time it is directed into a

loading spout. The grain pours down the spout and into the boxcar. It takes about four hours to prepare and load a boxcar.

The grain is loaded into boxcars. The cars are hooked onto a train. They are pulled to giant elevators known as terminals. The terminals are located at ports on the ocean (such as Vancouver), and on the Great Lakes (such as Thunder Bay). From the terminals Canadian grain is loaded into ships and carried to other countries. Some of Canada's best wheat customers are the U.S.S.R., Britain, Japan, China, West Germany, Belgium, the Netherlands, and Switzerland.

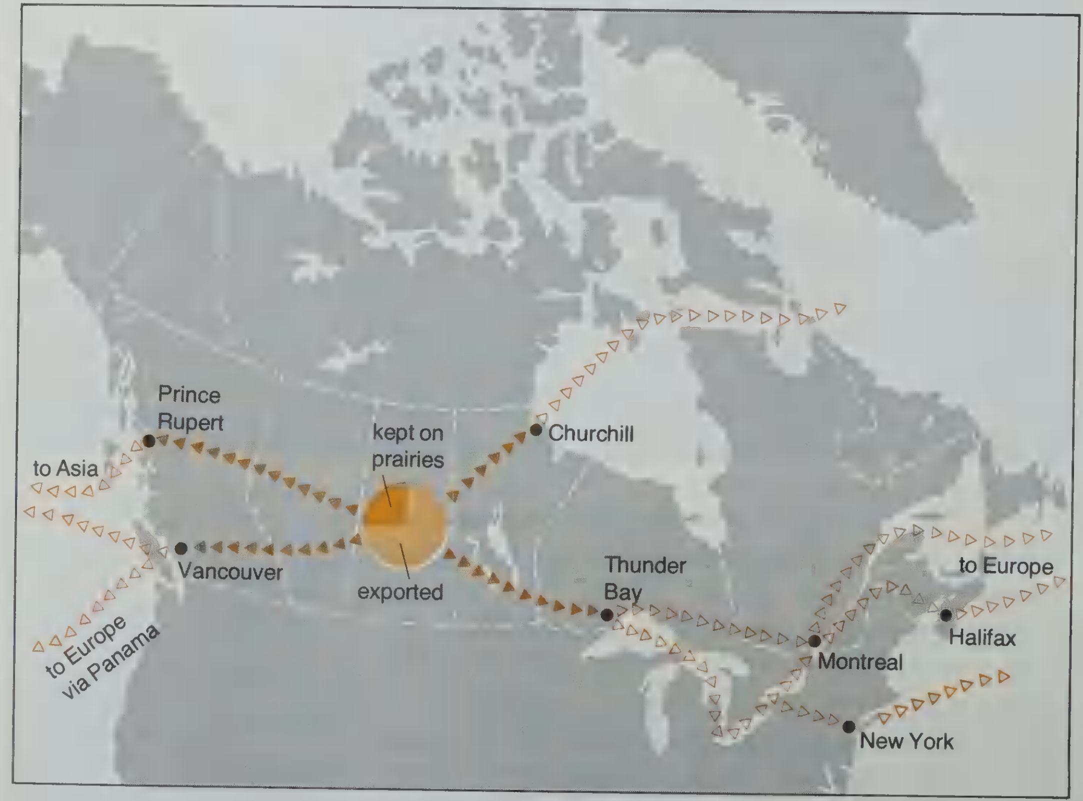


Canadian Wheat

Canada is the sixth largest grower of wheat in the world. Most Canadian wheat grows on the prairies. For every one hundred units of wheat grown in Canada, about sixty are grown in Saskatchewan, twenty-two in Alberta, and thirteen in Manitoba.

Where is wheat grown in Canada?

Why are the prairies sometimes called the "breadbasket" of Canada?



On what body of water is each of these ports located? Look at a world map in an atlas. Locate Canada's best wheat customers.

Wrap-Up Activities

1. Collect pictures of life on the North American grasslands. Make a collage on a bulletin board or a large sheet of paper. Include information on these topics in your collage.
    - animals, plants and trees
    - rivers
    - important cities and towns
    - important crops
    - how people earn a living
    - winter and summer sports
    - winter and summer pictures
    - modern methods of farming
    - natural products (minerals, oil, and gas)
2. You have now studied the desert, rainforest, mountains, tundra, and grasslands. Together with the rest of the class, make a list of how these places are different. The list could include features such as weather, animals, or plants. Divide into groups. Each group can choose a topic from the list. Look back to see what this feature is like in each place. Make a chart with this information, using sentences or pictures. The group can then show the class its chart and explain how each place is different.
3. Have a class discussion. People in all parts of the world have similar needs. For example, all people need food to live. What other needs do people have?
4. Decision-making. In which of the five places studied would you most like to live? Give your reasons.

6

THE CITY

RKO PALACE
COL
GIRL
DANC
KO PALACE
EMBASSY
FELLINI'S 8½

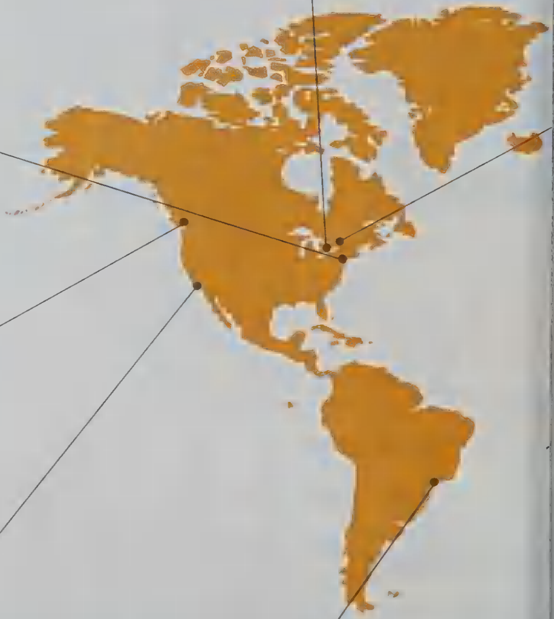
Map Activity

Study the world map and answer these questions:

1. Which city is located in South America?
2. Name the four cities located in Europe.
3. Which cities are located in North America?
4. Name the three cities that are found in Canada.
5. On which continent do you find Cairo?

New York

Toronto



Vancouver

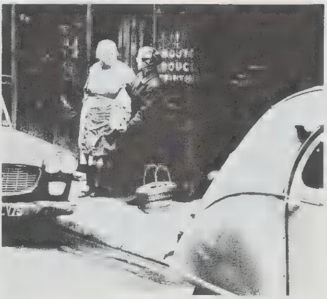
Los Angeles

Rio de Janeiro

Montreal

London

Amsterdam


Paris

Tokyo

Venice

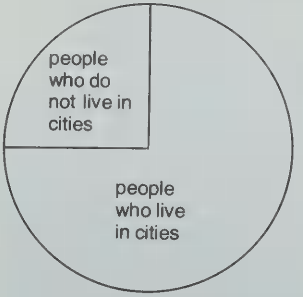
Cairo

Hong Kong

Use an atlas to answer these questions:

1. Paris, Tokyo, London, and Cairo are the capital cities of their countries. Name the countries.
2. Which Canadian city on the map is the capital city of its province? Name the city and the province.
3. Name the countries in which Venice and Amsterdam are located.
4. In what country are Los Angeles and New York located?
5. Which city is located south of the Equator?
6. Which city is located on the Tropic of Capricorn?
7. Which city is located near the Tropic of Cancer?

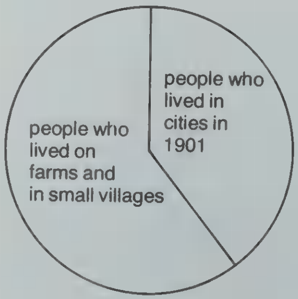
Where Do Canadians Live Today?



76 out of every 100 Canadians live in cities.

1. Where do most Canadians live?
2. Where do 24 out of every 100 Canadians live?
3. What reasons might people give for wanting to live in a city?
4. Why would some people not want to live in a city?

Where Did Most Canadians Live in 1901?



37 out of every 100 Canadians lived in cities in 1901.

1. Where did most Canadians live in 1901?
2. What change has taken place in where people live since 1901?
3. Suggest reasons why more people live in cities today.

Making a Living in the City

Every year, more and more people move to cities. They come from farms, town, villages, and other countries. Most move to cities looking for jobs. They work to make money to buy food, clothing, homes, and other things they need.

Some people have jobs making things in factories. These people work in *manufacturing*. Some people sell products in stores. These people are *retail* workers. Other people do not make things or sell things. They help other people and make the city run smoothly. These people are *service* workers.

New York is a city of very tall buildings called skyscrapers. Many people work and live in skyscrapers. Because this city is so crowded, the only way to build is up. So new buildings in New York grow taller and taller. The skeletons of the buildings are made of steel. Then they are closed in with glass. Crews work all the time to keep the windows of skyscrapers clean.

What is the tallest building you know of? What kind of work do the people in that building do?

Shopping Centres

Thousands of people in cities work in stores. All day long they sell things to shoppers. To make it easier for the shoppers to buy all the things they need, sometimes all the stores are built together in one place. This is called a shopping centre.

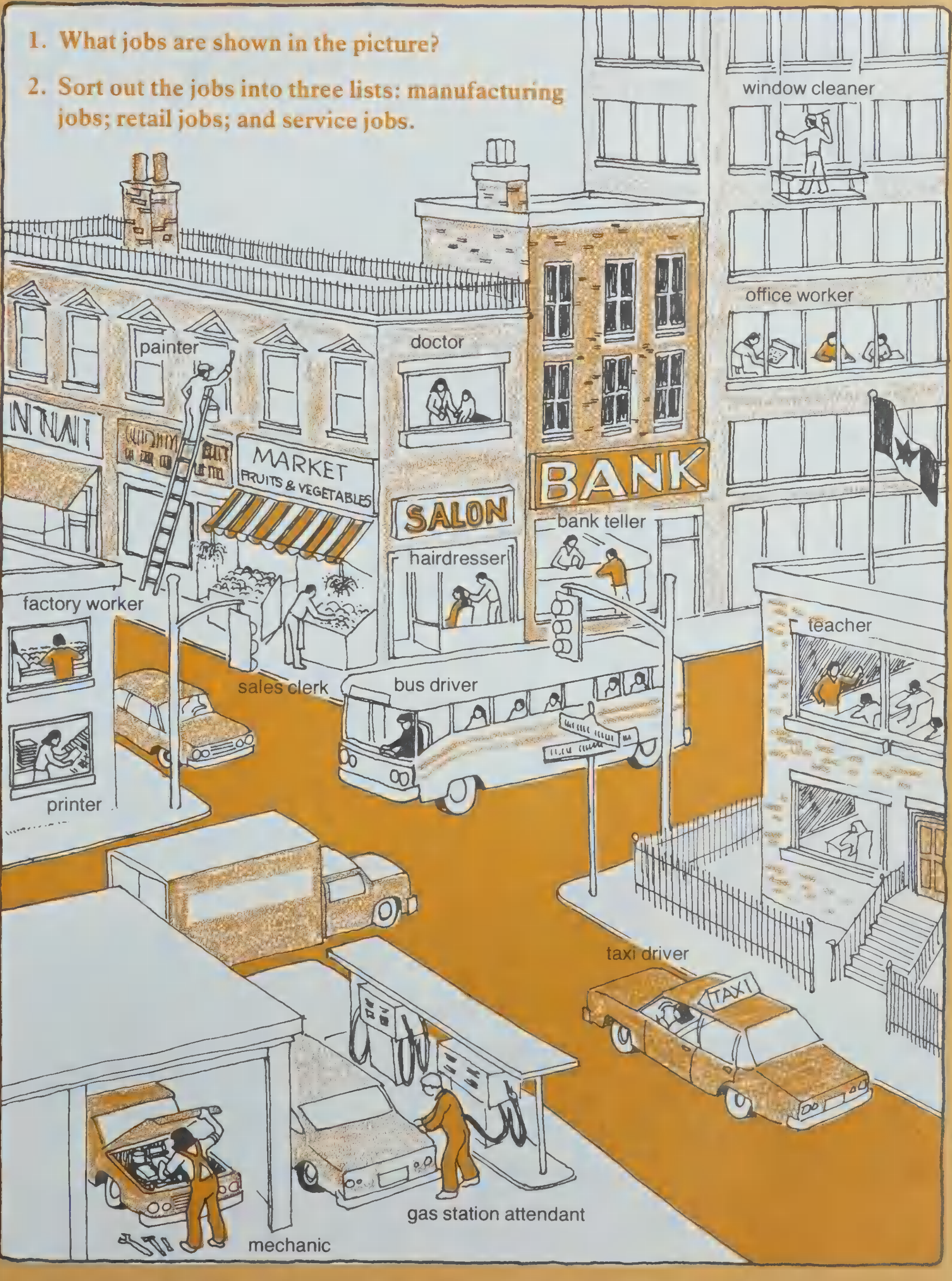
One shopping centre is the Eaton Centre in Toronto. Here, all sorts of stores belonging to different people are located under the glass roof. The stores are all connected by ramps and walkways. People can move easily from one store to another. Shoppers can enter the stores from the subway below or they can park their cars in one of the parking garages.

At the Eaton Centre you can buy everything from a piano to a chocolate bar. You can order a stereo, buy roller skates, or pick out a new bicycle. There are pet shops, snack bars, and toy stores. There are also many movies and restaurants.

There are also shopping centres that are outdoors. These are called markets. You find these all over the world.

Each day, the farmers and other people who work at the market bring what they have to sell to the marketplace. They spread out their goods on tables or on mats on the ground. If you look hard enough, you can find almost anything you want. There might be fruits and vegetables, clothes, rings, rugs, pots and pans, and leather wallets. You might even be able to find second-hand cameras or hair driers.

1. What jobs are shown in the picture?
2. Sort out the jobs into three lists: manufacturing jobs; retail jobs; and service jobs.



Where People Live in Cities

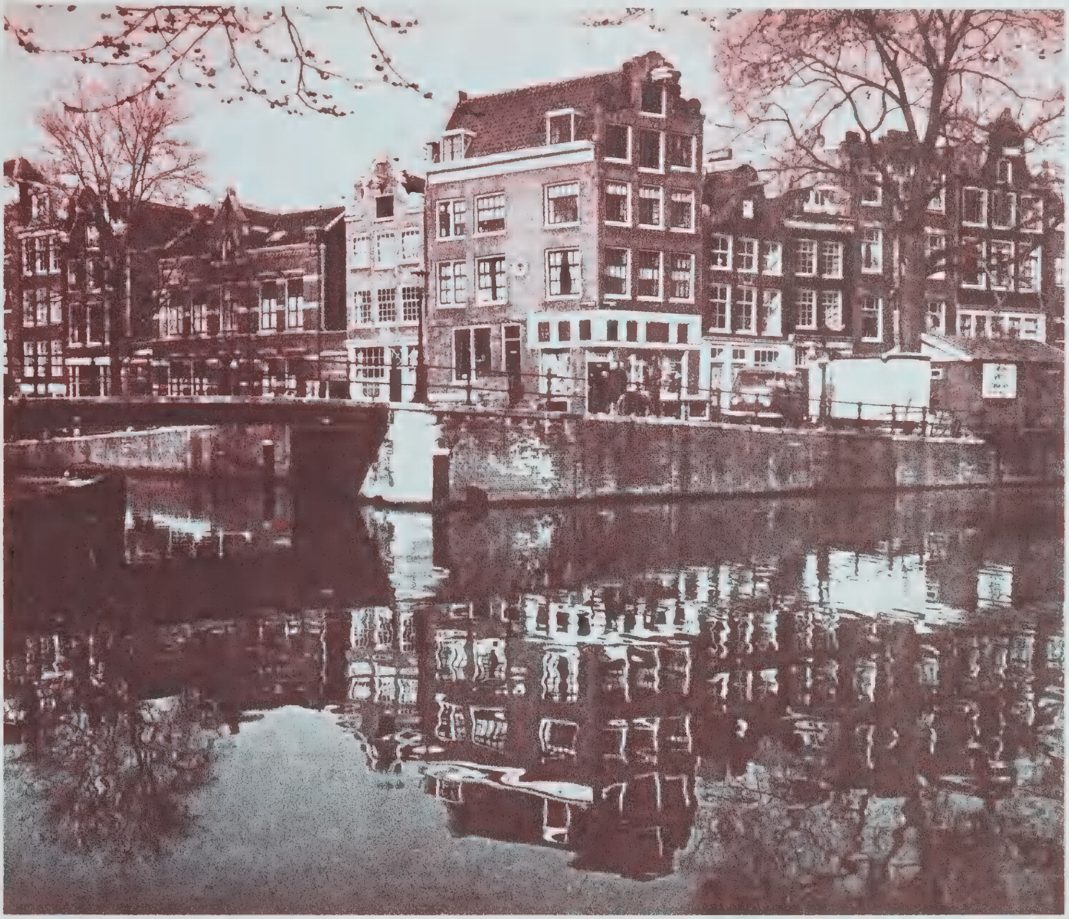
Some people in Canadian cities live in apartment buildings. There may be a hundred families or more living in one large building.

Some of us live in townhouses. These are houses that are attached to each other.

Some of us live in houses that stand by themselves. These are called single family homes.

A city is made up of neighbourhoods or communities. Each neighbourhood has its own schools, churches, and stores. Many people travel from the neighbourhoods they live in to the centre of the city to their jobs. To get to their jobs, they travel by car, bus, and subway.

How do people decide what kind of home they are going to live in? What do they have to think about when they are deciding?



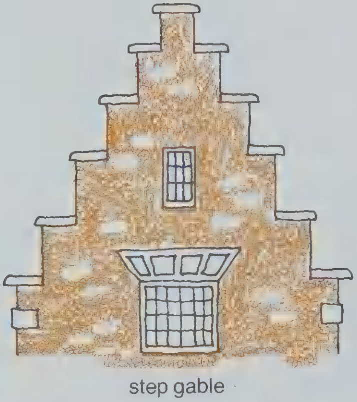
Notice the attractive tops of these row houses in Amsterdam. These are called gables.

In Amsterdam, Holland, many Dutch people live in tall and narrow row houses. These row houses stand along the canals that cross the city. Some of these houses are only one room wide, but four stories high. They stretch up, not out.

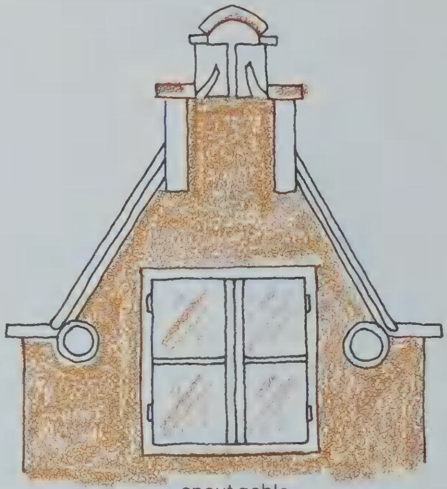
Inside these houses, the stairs are very steep. They go almost straight up. The stairs are so steep that big pieces of furniture have to be pulled up on ropes on the outside of the house and then brought in the windows!

Storks build nests on the chimneys of the row houses in Amsterdam. Dutch people say it is good luck if a stork nests on the chimney.

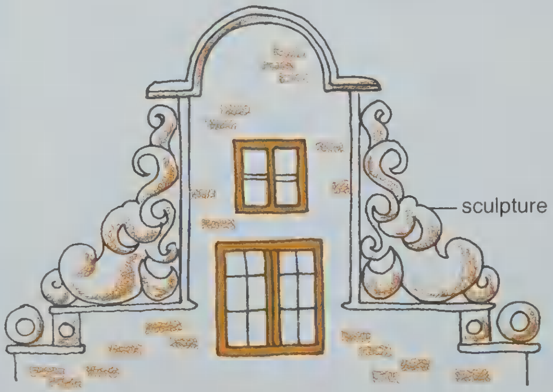
There are different kinds of gables. Can you spot these different kinds of gables in the picture?



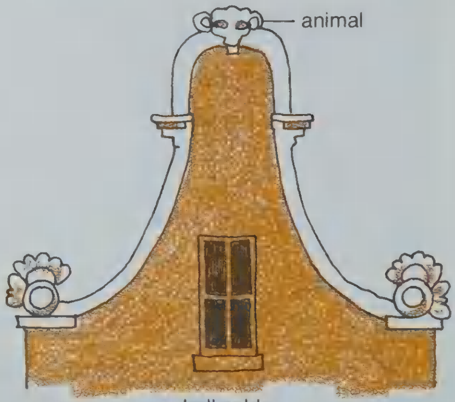
step gable



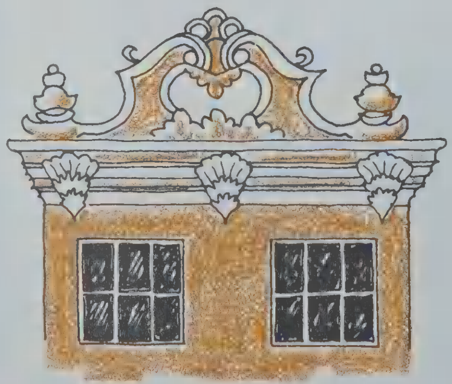
spout gable



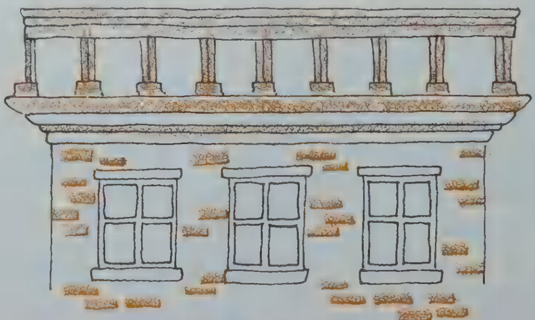
neck gable



bell gable



cornice



cornice with parapet

Hong Kong is a city on the coast of China. It is one of the most crowded cities in the world. There are so many people in Hong Kong that there are not enough houses for everyone to live in. Many people must live on houseboats tied up in the harbour. These houseboats are called sampans. Even the sampans are crowded together in the water. Walkways run between the groups of boats. The boats form a kind of floating city.

Grandparents, parents, children, chickens, and ducks are crowded together on these boats. People use the boats for fishing in the daytime, but they eat and sleep on them as well.

There are even restaurants and shops on sampans. Tourists can enjoy a Chinese dinner on a sampan. A boat taxi takes you to the eating sampan. A band playing music is on a sampan floating nearby. Then up bob the food boats with their special dishes. They serve shrimps, crabs, steamed fish, noodle soup, and other good food.

1. How do sampans help to solve the problems of overcrowding in Hong Kong?
2. How are sampans used for making a living? Do Canadians ever use their homes for making a living? Name some jobs in Canada that you might be able to do at home.

Getting Around a City

Getting around is a big problem in crowded cities. City streets are full of traffic. Thousands of people must move from one place to another every day. People have to get from places where they live to places where they work. Food and supplies have to be delivered all over the city. People often want to travel to other parts of the city to go shopping, visit friends, or see a sporting event.

Imagine you are sitting on the top deck of a London bus. Tell what you might see.

One of the nicest ways to travel in London, England, is on the bright red buses. They have an upstairs as well as a downstairs. You climb a narrow, winding staircase to the top deck. From there, you can look down on people walking on the street, riding in cars, and looking in store windows.

Most people in Tokyo travel around the city or between cities by train. Some trains run above the streets so that they do not interfere with traffic. Japan has the world's fastest train. It is called the Bullet and it can travel as fast as 210 kilometres an hour. Japanese trains are famous for running on time. The conductor apologizes if the train is half a minute late!

Why is it important that the trains run on time?
What reasons could you give for a train running late?

Think of all the cities you know of that have subways. How does a subway help a city?

Subways cross Tokyo below the ground. Moving stairways called escalators carry people down to the subways. In the stations, there are stores and snack bars where passengers can shop and eat. In rush hour, Tokyo subway stations are jammed with people. It is so busy that people are hired to push riders into the trains so that the doors can shut. Every day, dozens of riders lose their shoes in the crowd.

Los Angeles is a huge American city on the west coast of the United States. There are not enough buses to carry everyone to work. There are no subways. Almost everyone has to have a car. Many families in Los Angeles own two or three cars.

Because there are so many cars, Los Angeles has the world's best system of freeways. A freeway is a highway where cars can travel very quickly. These freeways go over and under the city streets. Drivers can speed through the city without having to stop for traffic lights. Helicopters fly over the freeways. They warn drivers over their radios when there are big traffic jams.

Have you ever been stuck in a traffic jam? Talk to a friend about it. How did you feel? How long were you stuck in the traffic jam? How did the driver feel?

Study the traffic on a busy street near your school. Count the number of cars that pass by.

The flat-bottomed boats of Venice are called gondolas. Find out the name of the gondola driver.

Venice is a city in Italy. Venice is built on islands. The islands are joined by small foot bridges over waterways called canals. There are no roads. People who live here have to go everywhere by foot or by boat.

Water buses take people to work. Meat and vegetables are delivered to the stores on barges. Even the post office uses boats to deliver letters and parcels.

With all these boats moving along the busy canals, traffic must be controlled. There are stop lights and stop signs where canals meet. Police ride around in fast motorboats. They even give out speeding tickets. Imagine getting a ticket for going more than eight kilometres an hour!

Big cities need to have airports. At Heathrow Airport, near London, England, airplanes touch down and take off every three minutes. Tourists from overseas often arrive by air. Business people in a hurry to get to meetings in other cities take airplanes. Fifteen million people pass through Heathrow Airport every year.

You probably know that there are airplanes that do not carry passengers. They are called cargo planes. They also land at the airport. They bring letters from faraway countries. Food that would spoil easily is brought by cargo plane. So are animals on their way to a new home in a zoo. In times of emergency, medicine and supplies can be rushed in by cargo planes.

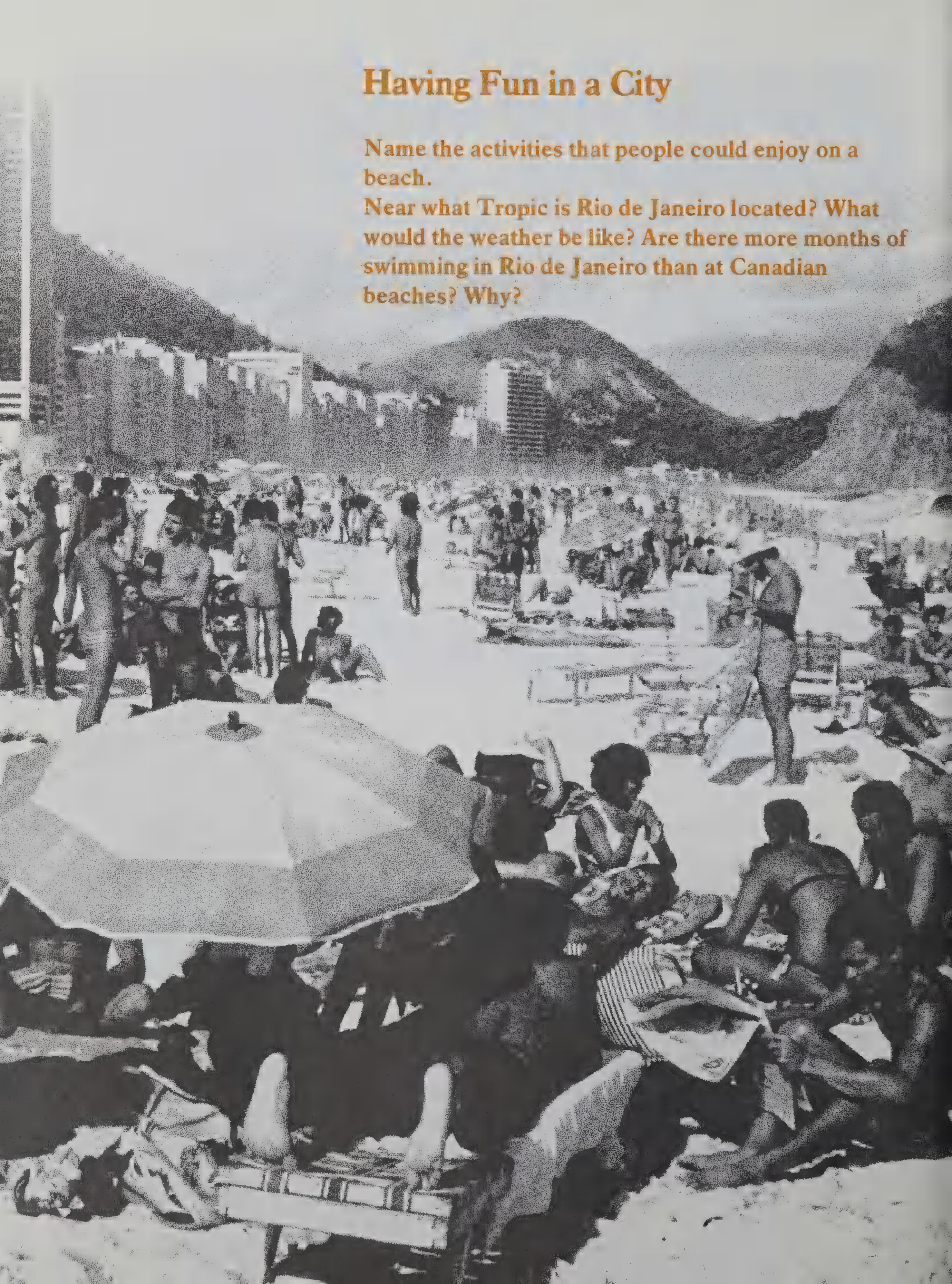
Airplanes make it easy for people and goods to jet from one city to another.

It takes many people to run an airport. What jobs do you think they would have?

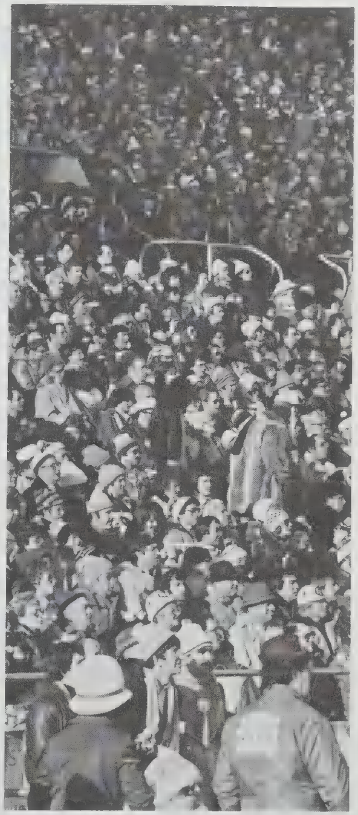
Having Fun in a City

Name the activities that people could enjoy on a beach.

Near what Tropic is Rio de Janeiro located? What would the weather be like? Are there more months of swimming in Rio de Janeiro than at Canadian beaches? Why?



◀ Having fun in the park



Sports fans

What sports can fans enjoy watching in a city?
What sports can people play in your city?

How can young children have fun in a park? What activities are available for older children in a city park?
How could senior citizens enjoy a park?
Why are parks necessary in cities?

Toronto is the home of the Royal Ontario Museum. At the museum, you can see displays of kings' and queens' clothes, Egyptian mummies, suits of armour, and dinosaurs. What do you think would be your favourite display? Why?

Dinosaurs at the museum

A beach in Rio de Janeiro

City Problems

In places where large numbers of people live, some problems will occur. What problems of cities do you see on the next page?

Do a litter survey around your school.

What other problems do cities face?

Perhaps you could talk to someone in city government about problems in your community. Can you think of ways to solve these problems?

How can you make your city a better place to live?

Do a City Study

Choose a city in Canada. It may be the city you live in, or one close to where you live. It could also be the capital of your province or of Canada.

If you divide into four groups, each group can have a topic. These are:

- **working in the city**
- **buildings in the city**
- **getting around in the city**
- **having fun in the city.**

Make a picture booklet or a slide presentation about the city you choose. Write a sentence or two to explain each picture or slide.

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The City

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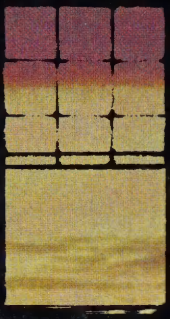

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